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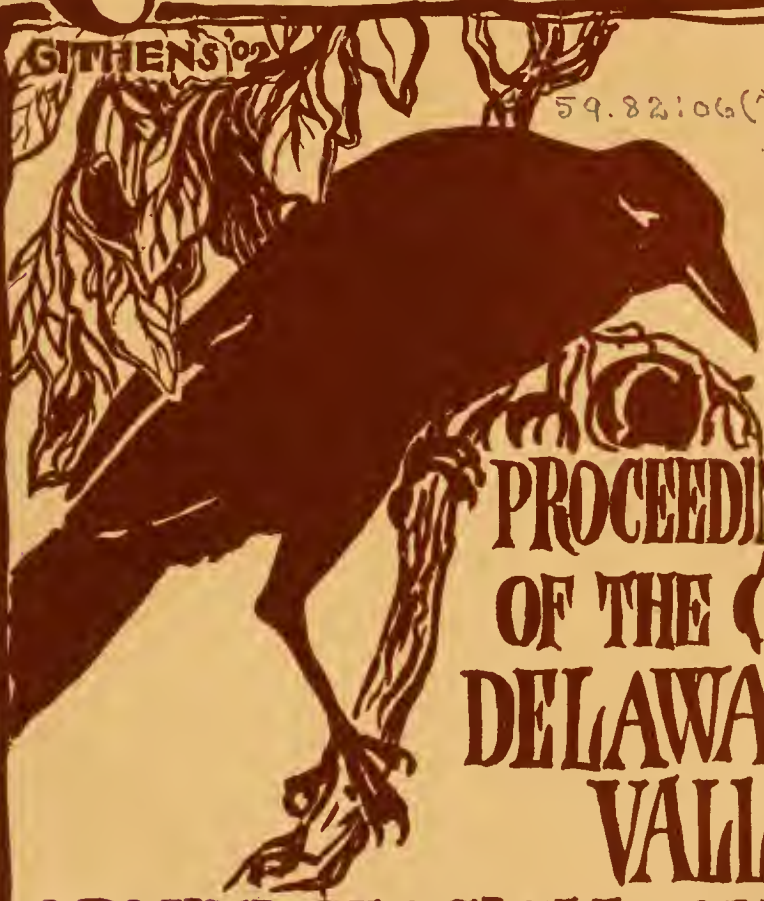
CASSINIA

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PROCEEDINGS
OF THE
DELAWARE
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ORNITHOLOGICAL CLUB
OF PHILADELPHIA

1905

ISSUED FEBRUARY, 1906.

CASSINIA

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- The Birds of Eastern Pennsylvania and New Jersey**, by Witmer Stone, pp. 176 with two maps and portrait of Alex. Wilson. One Dollar (Post paid \$1.12)
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*Charles L. Bonaparte
Prince of Musignano*

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PROCEEDINGS OF THE DELAWARE VALLEY ORNITHOLOGICAL CLUB

No. IX.

PHILADELPHIA, PA.

1905.

Charles Lucien Bonaparte

BY SPENCER TROTTER

IN one of his essays Emerson speaks of the interest that we take in a man who has some pursuit in life other than that which appears upon the surface of his daily affairs. The most common-place fellow is seen in a new light when we find that behind the business or professional face there lurks a knowledge of birds, or botany, or butterflies. This view of the personality of a man becomes still more interesting when his name is associated with that of deeds vastly different from the quiet pursuit of a science.

Here is one whose name conjures up the thought of empire and the pageant of war, but whose joy in life was far removed from such vainglories. To most minds there is but one Bonaparte. As a young ornithologist I used to connect the name of Bonaparte's Gull with that of *Le Petit Caporal* and it was somewhat of a surprise, one of those agreeable surprises, to find that a near kinsman of the emperor was an ornithologist.

The subject of this sketch was the eldest son of Lucien Bonaparte, brother of Napoleon, and Charles was therefore a nephew of the emperor. He was born in Paris on the 24th of May,

1803, and christened Charles Lucien Jules Laurent Bonaparte. Neither Lucien nor his son Charles appears to have acquired that lust of power which characterized the emperor, though Charles was more or less active in certain reform movements after he had settled in Italy. Lucien, the father, was a man of scientific and literary attainments, and though active in French politics during the Emperor's prosperity he later retired and made his residence in Italy. His line was excluded by Napoleon in his scheme for establishing his brothers on the European thrones. In 1814, Pope Pius VII made him Prince of Canino, a title, together with that of Prince of Musignano, which Charles assumed after his father's death. Joseph Bonaparte, elder brother of Napoleon and Lucien, and created King of Spain by Napoleon, fled to America after Waterloo and settled at Bordentown, N. J., and also took up his residence in Philadelphia, where he occupied a house on Ninth street above Spruce. This house is now the home of a personal friend of the writer and has suffered little change in the lapse of time. Charles joined his uncle Joseph in America (probably about 1822) and married his first cousin, Zenaide, Joseph's eldest daughter. In 1825 Princeton University conferred upon him the honorary degree of Master of Arts, though he apparently never attended the college as a student. He left this country in 1827, when he took up his residence in Italy, where he spent the remainder of his life, engaged in scientific, mainly ornithological work. He died in Paris on the 29th of July, 1857.

During his few years' residence in and near Philadelphia Charles Lucien Bonaparte, then a young man in his early twenties, was engaged in the study of ornithology and in the preparation of his work—the continuation of Wilson's "American Ornithology." These four volumes have always associated his name with that of Alexander Wilson, though the latter died when Bonaparte was but a lad ten years of age, and before he had set foot in America. With Audubon, however, Charles was personally acquainted. He first met the "backwoodsman" when the latter was in Philadelphia taking painting lessons under the artist Thomas Sully and seeking a possible publisher for his great work. Audubon's journal contains the

following notice of this meeting : "April 10, 1824, I was introduced to the son of Lucien Bonaparte, nephew of Napoleon, a great ornithologist, I was told. He remained two hours, went out, and returned with two Italian gentlemen, and their comments [upon the bird paintings] made me very contented." A warm friendship sprang up from this meeting, and though the two saw little of each other's society, many letters passed between them. We have a glimpse of Bonaparte from the pen of Audubon, written in 1827, when the former was in London, having just arrived from America. "His fine head was not altered, his mustachios, his bearded chin, his keen eye, all was the same." At Bonaparte's lodgings Audubon was surprised to hear the servant address Bonaparte as "Your Royal Highness." "I thought this ridiculous in the extreme," says Audubon, "and I cannot conceive how good Charles can bear it; though probably he *does* bear it because he *is* good Charles." Again on December 4, 1827, Audubon writes: "A letter from Charles Bonaparte tells me he has decided not to reside in America, but in Florence; this I much regret."

Another ornithologist with whom Bonaparte was in close touch in his early years was Titian R. Peale, whom he sent to Florida at his own expense to secure material for his American Ornithology.

While in Philadelphia Bonaparte was an active member of the Academy of Natural Sciences, having been elected in 1824. At this time we have an interesting sketch of him in a letter written by Dr. Edmund Porter, of Frenchtown, N. J., to Dr. Thomas Miner, of Haddam, Conn., dated October 25th, 1825.* Among a number of worthies who were present at a meeting of the Academy, Porter mentions Bonaparte in the following words: "*Bonaparte* is the son of Lucien Bonaparte and nephew to the Emperor Napoleon; he is a little, set, blackeyed fellow, quite talkative, and withal an interesting and companionable fellow. He devotes his attention to ornithology, and has published a continuation of Wilson's work on the above subject. . . . C. L. Bonaparte read a Memoir on the Golden Plover.

* See article by Witmer Stone in *The Auk* for April, 1899.

To a novice it seems curious that men of the first intellect should pay so much attention to web-footed gentry with wings."

In that trio of early American ornithologists—Wilson, Audubon and Bonaparte—names that must always be associated together—Bonaparte stands out distinctly as the systematist, the one whose logical mind saw more clearly than that of any other ornithologist of his time the fundamental problems of relationship. His first paper published in the Academy's journal was entitled "Observations on the Nomenclature of Wilson's Ornithology." Here was in fact, and I think in name also, the first appearance of "nomenclature" in ornithological science. To quote Coues, it "introduced a new feature—decided changes in nomenclature resulting from the sifting and rectification of synonymy. It is here that questions of synonymy—to-day the bane and drudgery of the working naturalist—first acquire prominence in the history of our special subject." When we realize that when he prepared this paper Bonaparte was barely twenty-one years of age, it is obvious that we are dealing with a man of extraordinary ability. Furthermore he wrote his scientific contributions in the next few years in three different languages, and though he was constantly apologizing for his "bad English," he had little to be ashamed of. His comprehensive knowledge of ornithology was not confined to the bird life of any single country; it was cosmopolitan in its range and character, as is attested by his great work, the *Conspectus Avium*, published in 1850. Bonaparte's *Synopsis*, published in 1828, was the first attempt at a definite and systematic arrangement of the species and genera of North American birds. It is the original of the modern check list and the various systems of classification. The copy of the "Synopsis" carried by Audubon on his Labrador trip, and with his marginal notes on the various species of birds observed is now, among other interesting Americana, in the collection of a Philadelphia gentleman. Another fact of interest relates to the names of the two genera of American doves described by Bonaparte—*Zenaida* and *Zenaidura*. These evidently bear the name of his wife, Zenaide, a fact, and one of the very few facts, overlooked by Dr. Coues in his bibliographical researches.

During his residence in Italy, Bonaparte published the *Fauna Italica*, 3 vols., which appeared between the years 1833 and 1841. He also published two smaller works—the Comparison of the Birds of Rome and Philadelphia, and of Europe and North America, while he was a frequent contributor to many scientific journals.

Bonaparte, as shown by letters that are still preserved, was a liberal patron of the Philadelphia Academy in those early days when it was a struggle indeed to keep such institutions in existence. His letters show also a decided appreciation of humor, for on one occasion he writes from New York commenting on the grand opera that he had attended, and states that owing to the prevailing influenza the audience was constantly coughing and sneezing, "which supplied in a pretty awkward manner the deficiency of instruments in the orchestra." This letter ends with a plea to his friend Dr. Hays of the Academy, "For God sake," he says, "don't throw a feather away of those East Indies birds before I have examined them. Some may prove interesting."

No direct issue in the male line survive to perpetuate the name of the ornithologist, though he had a number of children—one Cardinal Bonaparte, of Italy, died in 1895, and another, Charles, died in 1899. A brother of the ornithologist, Louis Lucien Bonaparte, was celebrated as a philologist, especially for his work on the Basque language and on various European dialects.

Alexander Wilson will always hold a distinctive place as the pioneer worker in American ornithology. Audubon was the artist, the gifted painter of our bird life. Both of these men were poet and artist rather than scientist. It was Charles Lucien Bonaparte who first placed American ornithology on the firm basis of science.

Summer Birds of Broadhead's Creek, Monroe Co., Pa.

BY CORNELIUS WEYGANDT

IN the northern part of Monroe county, where the Pocono plateau breaks down into lower lands that roll eastward to the Delaware, is a country that I love. Here at Buck Hill Falls, in a shack in the woods on a low mountain, fifteen hundred feet above tide-water, I spent the three months, June 15–September 15, 1905. The forest about the shack was burnt through a little more than twenty years ago and is grown up again into a fairly open woods of rock-oak, chestnut and hickory. Only here and there are left trees of the previous forest, and there is comparatively little undergrowth on the mountain-top, save where the trees have been cut to make way for cottages. There is one cleared space where a farmer lived and worked a few fields before the Friends made a summer settlement there. The building of some seventy cottages has altered somewhat conditions in these woods; it has driven away some birds and brought in others, but, as yet, no English Sparrows.

When we arrived on the evening of June 15, you might have supposed you were deep in the woods, so loud was the dusk with Whip-poor-wills and Ovenbirds and Chebecs.* As we climbed the steps of our shack a Robin fluttered out from her nest under the porch roof, and next morning I found two deserted Pewee's† nests plastered on the timbers underneath the shack, which was raised high from the ground and left open below so that the birds could pass in and out at will. It was slow work going to sleep that first night, tired as we were, so incessant were the Whip-poor-wills; in the very heart of the night I awakened to the flight song of an Ovenbird; in the gray hours the Wood Pewees began to call; and then the Chebecs

* *Empidonax minimus*.

† *Sayornis phoebe*.

and Great-crested Flycatchers joined the chorus that thus became something very different from our Robin chorus in suburban Philadelphia, although this was partially Robin song, for there were many Robins at Buck Hill too. Red-eyes were about in plenty, and I had not been long about in the morning when I heard Barn-Swallows going over and saw two Swifts hurtling by. Swifts were rare birds hereabouts, however, as they were everywhere I went within a radius of ten miles. During this first day I made acquaintance for the first time with the Blue-headed Vireo, which I soon got to know as one of our most ecstatic and delicious singers—the books have failed to do him justice. Most of the many Wood Thrushes of the neighborhood lived far down the mountain side, but I heard them singing in the distance, and on the evening of our second day a Hermit Thrush came close by and sang in calm raptures at intervals for half an hour while the twilight deepened into night. Before many days were over I had found nests of Flickers and Indigo Buntings and Cedarbirds and Tanagers on the mountain-top, where, too, were Catbirds and Chewinks* and Chipping Sparrows, these latter chiefly in the brush where the forest had been cut off to afford a view out over the country.

Looking out from the mountain-top I could see that this Canadensis country—as the natives call the lands of the upper tributaries of Broadhead's Creek—is a great half-bowl scooped back into the Pocono plateau, southwest and west and northwest and north, with little timber of any size on it, except to northward, but with second growth or scrub almost everywhere. A higher point, the lookout on the very top of Buck Hill, a half-mile from our shack, overlooks most of the country I walked over, and in several directions, miles further than I walked. From this point you look upward along the rising sides of the half-bowl over unbroken woodland as far as the eye can reach. It is sombre and desolate, this unbroken greenness, with something in it both of the freedom and menace of the sea. For about three miles westward it is growth like that on Buck Hill, rock-oak and chestnut and hickory, grown up since the

* *Pipilo erythrophthalmus*.

great fire of 1882, but with the horizon you come to the edge of the Pocono plateau, a country of huckleberry barrens, burnt over every few years, and having few trees save scrubby fire-cherries and sassafras. Eastward the outlook was over the gorge of the Buck Hill Branch with its old hemlocks and oaks out into the open valley, and its farmland and over upland farms to the reddish cliffs of Spruce Mountain and Wismer Mountain and to the green, rounded outlines of East Mountain, looking lawn-like and smooth at this distance with its knee-high growth of huckleberries.

At the far end of East Mountain is Goose Pond. Below the far end of Wismer is Price's Pond, and on this side of Wismer Gravel's Swamp, but there is no water in sight anywhere. You can see, however, the deep valleys running back into the Pocono plateau, cut out by the various branches of Broadhead's Creek—Mill Creek furthest southwestward, then Rattlesnake, then the Buck Hill, then Middle Branch and Levis Branch furthest northeastward—all draining parts of the plateau. The valleys of these creeks I explored, becoming more familiar with that of the Buck Hill, but spending a good deal of time on the Middle Branch and the Levis Branch and hunting up the source of the Goose Pond Branch in Goose Pond in the pinebarrens of Pike County. This pond is the only piece of water of any size in the vicinity, Price's Pond being scarcely larger than a country mill-dam, and the tannery dams on the Rattlesnake being all but empty now. Southwestward and westward are the great ice dams on the Tobyhanna—Mr. Carter's neighborhood*—and eastward the big ponds of Pike County.

Along some of the branches of Broadhead's Creek there is still some primeval forest, but only a bit here and there; the upper courses of all of them run through country burnt over for huckleberries or for grazing for cattle or sheep. Just below the Buck Hill settlement and about Buck Hill Falls are a few acres where the old hemlocks are still standing. There is not here continuous hemlock forest with floor bare save for the hobble-bush such as you find in some parts of Pennsylvania, but a

* Cf. CASSINIA, 1904. p. 29.

tract in which the trees are rather far apart and interspersed here and there with great oaks. Underneath and about them is almost impenetrable rhododendron brush, which not infrequently reaches a height of fifteen feet. These hemlocks and the burnt-over woods just above them are the hunting-grounds of the Warblers. The Chestnut-sided Warbler, in my experience here, is a bird of scrub woods near open spaces in the lowlands; the Maryland Yellowthroat I found in his usual swamps, but also high on the huckleberry barrens; the Yellow Warbler was found in open fields in the lowlands and the Black-throated Blue Warbler I came upon on the high, dry slopes of Spruce Mountain, as well as here in the hemlocks, finding the bird in both places until the time I came home; the Black-and-White Creeper, too, I found in all sorts of cover, and from the middle of July on they were much in evidence in the dry woods on the mountain-tops. I saw two of these birds in far separated parts of the Canadensis Valley, with each a young Cowbird. To the hemlocks and rhododendrons along the streams stuck pretty constantly the Parulas, the Magnolias, the Blackburnians, and the Black-throated Greens, and several others I could not identify. A pair of Chats that I came across as I was listening to a Veery singing—an overlapping of faunas that was very interesting to me—were as you would expect in a thicket where field and wood met; the only Hooded Warblers that I saw were in low second growth along the upper waters of the Buck Hill; the Canadian Warbler I found, as I had found him in the Berkshires, in high, dry woods, but just over the gorge through which the Buck Hill flows; the Nashvilles, which I did not see until August 12, evidently migrants, were about our shack.

The Water Thrushes were always along the streams. It was very interesting to find both species along the Buck Hill, and in the breeding season. Later in the summer the northern Water Thrushes seemed more plentiful than the Louisianas. I got to know the smaller bird's appearance and ways of hunting, as well as I knew the ways and appearance of his southern cousins, for the northern birds were the tamer, often coming within a few feet of me as I sat by the stream and waited for them to come down past me. But I never found their nest as

I did that of one pair of the Louisiana Water Thrushes. It was in a shallow gully between two tumbling streams that these Water Thrushes had built their nest. The gully had been scoured out when the snow-waters of the spring thaw had turned these little trout streams to torrents no man dare ford. Along the gully's sides the roots of a great hemlock had been washed bare, and in these roots, not fifteen inches above a little pool of water, the birds had built. Overhead a great hemlock towered, against whose rock-binding roots debris had piled up, wreckage of spring floods. Along the Buck Hill all the way to its junction with the smaller stream, Griscom's Creek, a hundred feet below the nest, and on a hundred yards further, great hemlocks pillared a lofty aisle of green gloom over amber water. At intervals the sun broke through, sinking wells of light from the tree-tops to the bottom of the clear pools. Up stream a few yards from the nest there was an open space where the sun made its way down to the hemlock roots in early morning and late afternoon, but at other hours no sunlight reached the nest to dry the dampness everywhere about. On the far side of the Buck Hill, rhododendrons lifted pale crowns of bloom high among the hemlocks; the little stream flowed from under a very tunnel of rhododendron. Just above the nest the boulders and pebbles were bare of moss, the sand caught by the little pool telling how the scouring had been accomplished. The brown of the hemlock trunks everywhere about warmed the green gloom their branches made, blending in with the weathered reds and grays of the rocks and the grays of the pebbles and sand to make the wood-floor a gray-brown monotone save where the water slid along, wimpled amber, or tossed up in white spray. A little to each side green predominated. Trees and boulders were lichened, the stones in the bed of the little stream were heavily tressed with water-moss, and the trunks of fallen hemlocks were damp and sodden and green with decay. Seemingly everything about was damp but the five young birds sitting closely in the nest in the hemlock roots.

Glad indeed I was to see them, for it was an hour and a half since the anxious cries of the old birds and their full mouths had halted me in my walk up stream with the surety that the

nest was near. I found the nest only when there was no other hand-space in an area thirty feet square to look in. Just a foot from my feet in the spot where I first stopped was the nest, but so still were the birds and so like their color and that of the leaves and fibres out of which the nest was moulded to that of the debris in the neighborhood that my eye had failed to spot them. There they sat packed in closely, three on the floor of the nest and two back of and half on top of their fellows. All were facing my way, but by not so much as an eyelid's quiver did they indicate their presence, when I stopped within touching distance of them. I had seen the parents the day before a little down stream from their home and watched them running along the sides of the stream and out into the shallows which extended far into the stream, owing to the very gradual dip of the rock that was here the stream's bottom. Beautiful I had then thought them, their chocolate-brown* backs and spotted breasts and clear buff throats standing out distinctly against the red shale of the shallows. Then I had noticed their habit of flying up stream a certain distance, then hunting down stream, and then flying up to begin the hunt down over the same ground again, just like the European "water thrush" or dipper that I had first seen in Keimanagh Pass in Kerry. I did not then notice them and I have never noticed them run under water like the dipper, but they chase gnats out into water two inches deep and gather larvae from the stones in midstream, flying out to them and then hunting around them if the water is not too deep or too swift.

Now I had a still better chance to view them, for the longer I searched for the nest the more anxious they became, since all the while the young were going hungry. Both old birds walked about nervously, tilting their tails up like the Solitary Sandpiper. Worm in mouth as they were, they could utter their complaining "tswit" as sharply as ever. I sat still for a long time and they finally came close to me, tilting themselves about on rocks and logs not ten feet away. The female—as I took it to be because it was the more worried of the two—came the

* In this light there was none of the "olive" the books speak of on their backs.

closer, and one time when I had seen the male dart into a cranny of the drift pile and had followed him there in the hope of finding the nest, she got to the nest without my seeing her. I heard the young birds then for the first time, but she was out and walking off some six feet from where I later found the nest before I got my eye on her again. This was the only time the young were fed in an hour and a half. Except for the one time she fed them the female for all the ninety minutes never relinquished the worm she had for them, but the male three times ate his. He would scold around close to his mate, the two often walking the same log or stone, worm in mouth, but after twenty minutes or so the strain or temptation would become too great and he would pound his worm tender on stone or twig and then swallow it. He sang several times after so yielding, but he was quickly away again and back with a worm in a few minutes. Once he mounted singing in the air like an Ovenbird, ending his upward rush by catching a flimsy, big-winged, greenish insect, which he promptly swallowed on his return to the ground. But the restraint of the young seemed to me more wonderful than that of the parents. Time after time in my search I was almost touching them, but they were true to their instinct to keep still. The parents, of course, were in no greater agitation after I had found the nest than while I was hunting for it, for I was as often near it then as now, when I could see it. I did not disturb the young, but when I returned in the afternoon there were but four birds in the nest. The next morning all were gone. I found them less than a hundred yards up the smaller stream hidden in a dense rhododendron thicket. There they remained for three days longer and then I saw them no more, or rather after that I could not identify any Louisiana Water Thrushes I saw as this particular family.

I met Water Thrushes along the stream on and off after that until August (the young in the nest I found flew on June 25), both Louisiana Water Thrushes and Northern Water Thrushes. A month later (July 21) after I had been lazing about a half hour on a large rock just below the nest, watching trout in the stream and warblers in the hemlocks, a Louisiana Water Thrush darted out of the brush just alongside of me, his departure

arousing a teetering as of young in the brush. They had evidently been there all that time, taking perhaps their midday rest, for it was now well on towards five o'clock in the afternoon. You could see no more than a few feet into the rhododendrons, and as they were practically impenetrable, I could not find how many young were there. After hunting on the stream for a few minutes the bird that had flown out of the brush flew back into it, and that was the last I saw of him. Even as late as August I usually came upon Water Thrushes by the Buck Hill if I went there early in the morning, but after the first week in July I never saw one there from ten to four o'clock. They sang on until July 20, late in the evening and early in the morning.

I am not sure I heard the song of the Northern Water Thrush on the Buck Hill for I never saw one singing, but I got to know well the song of the larger species and other less fine but unmistakably Water Thrush songs I put down to the northern bird, and several times I saw this species just after hearing the song I had attributed to it. The place in which the bird sings lends largely to the charm of its song, but the song in itself is the finest warbler song I know. In June I heard it at midday flung out above the dappled amber pools under the hemlocks, the purring and slucking of the water about the stones muffling its sharpness so that the notes as they reached my ear were clear and pure. Recall the more musical part of the Ovenbird's flight-song and you will have something of its quality. In late July I heard it at the hour when moonset and sunrise are one. It could not compare with the song of the Veery heard at the same time, and doubly precious so late in the season, but I shall always associate it with that song, and with the dawnlight over the mountains, and with the moon riding down westward behind the pines. But it was even more memorable to hear it at night. I never heard it at moonlit midnight as I have so often heard the song of the Ovenbird, but perhaps I could have heard it then had I been in the Buck Hill gorge at the proper hour. There one evening in early July, I did hear the Louisiana Water Thrush sing with an ecstasy and abandon I had not heard from it before. Under a high bluff and just far enough

below the falls for their roar to be pleasantly dulled, the Water Thrush sang. Down here in the hemlocks it was darker than twilight, although it was not quite eight o'clock. Perhaps the bluff acted as a sounding-board, perhaps the soft thunder of the falls made a vibration of the air that added intensity to the song. Whatever the cause it rose above the rhododendrons with unwonted volume, still far from a powerful song, but so sweet and appealing that I could not but listen though a glorious-voiced Wood Thrush was singing not far away.

Two birds I saw but once during the summer were near the Water Thrushes' nest. In one of the hemlocks just above it I watched, on July 16, three Crossbills, which after clambering about on the topmost boughs for about a quarter of an hour flew off towards the Tobyhanna barrens; and a little further up stream, where a field comes down to the creek, I came upon, earlier in July, a White-eyed Vireo, a bird strangely out of place in the rhododendrons. When we arrived at Buck Hill Pewees were nesting along the creek, probably for the second time. I could not help wondering if these were not the same birds that had raised broods earlier underneath the porch roof of the cottages of the settlement or under the cottages themselves. There were none on the mountain-top in the middle of June and I saw none there later. They could hardly have been driven away by the cottagers, for not half of them were there at that time and few at all had come before June 1. One of these late stream-side nests was almost reached by the spray of the falls in its situation under an overhanging cliff; another in a damp spot the sun never reached on the cliffs above the swimming hole, very different locations from the dry sites about the cottages but probably just as comfortable in this warmer season. In the former nest the brood was successfully hatched and launched into the world. The fortunes of the second nest I neglected to follow.

Around this swimming-hole there were Veeries two years ago but now they have been driven further up-stream where they sang on past July 20 and one even until the twenty-third. Now the Wood Thrushes were *the* thrushes about Glen Mere and glorious-voiced thrushes they were, too. They sang on into the

thick dusk, until eight o'clock, but higher up the mountain, although there the light lingers later, they generally cease their song a half-hour earlier. These higher, dryer woods were inhabited chiefly by Tanagers, of which there are more at Buck Hill than I have seen elsewhere, Vireos, and the omnipresent Ovenbird and Whip-poor-will. Here too, were a few Flickers and Hairy Woodpeckers. I saw no Downy Woodpeckers until September 13 and then only one, evidently a migrant. Two years before I had seen many Red-breasted Nuthatches hereabouts in their September migration but last September I saw none.

The Kingfishers sometimes came up-stream from the open country but they were oftener found where meadows run down to the stream. Everywhere, along the streams, along the roads, about the houses, in the deep woods, were Humming-birds—they were among the commonest birds of the locality.

Beyond the Buck Hill, between it and the Middle Branch was farming country—bottoms where you found the Yellow Warbler and Catbirds; orchards busy with Cedarbirds and Kingbirds and Wrens and Bluebirds and Baltimore Orioles, and barns swallow-haunted, with Barn Swallows within and Eave Swallows without. The Eave Swallows had several large colonies both here in the valleys and high up the hills, but you found them on every third barn in the lowlands and only on every fifth barn in the uplands. One lowland barn boasted fifty-one nests, forty-four on the southern side and seven on the northern. There were young in some nests on June 16 and two months later I still found a few young not yet flown. On August 17 there were hundreds of them on the telegraph wires and ridge-poles. After August 20 I saw none. Every barn and wagon-shed in the country seemed to have its pair or two of Barn Swallows and I think there must have been as many of them all told as of the Eave Swallows, although of course, you never saw them in any one place in such numbers.

In bush-lined fields in the valleys were Field Sparrows and Indigo Buntings and Grasshopper Sparrows, but these birds like the Robins and Redeyes and Cowbirds could not be said to be more numerous in one kind of country than another. With the

Grasshopper Sparrows I spent a good deal of time. One place from which I could always flush two pairs early in the summer was a barren field of sparse grass below a Moravian grave-yard. They were frequently in the grave-yard, where I saw my solitary Cuckoo, a Yellowbill, of the summer, and would sing from the tomb-stones and from the fence-posts. But their favorite singing stations were the tops of dried mullein stalks in the barren field. One windy June morning I lay here under the lee of a stone wall for an hour watching them. I sought in vain for their nests. All the places they dropped down into were apparently only feeding-spots. They scratched up the small stones in the field, presumably to get at some sort of insect life as well as for grass-seeds, leaving decided traces of their energetic leg-work. Every few minutes they would mount to the mullein-tops with their curious fluttering flight as of young birds and sing, sometimes the grasshopper note and sometimes a fuller song that I can best represent by "tweedle-tee, tweedle-tee, tweedle-tweedle-tweedle-tee."

Climbing the Dutch Hill road that leads from the bottom to the upland between Middle Branch and Levis Branch, you pass a thistle-patch where Yellowbirds were always to be seen in late summer, but all summer long wherever I went I heard them singing in the air as they dropped over. Further up this road I saw on several days between August 8 when I saw it first, and August 16 when I saw it last, a Shrike. Which shrike it was I do not pretend to know, but very interesting it was to watch.* For minutes at a time it would sit motionless on the top of the single second-growth chestnut left where the wood-lot was cut off; then spying some insect it would swoop down upon it, to return with labored flycatcher-like flight to its chosen station. Sometimes it must have missed its strike or found the prey so small that it could gulp it down without dismembering it, for it would relight on its tower and take up the watch again, without any sign of feeding. At other times I could see it carrying back the insect. These times it would deftly insert the insect under its foot and pressing it down to the limb tear it to pieces hawk-

* In all probability *Lanius ludovicianus migrans*, the Migrant Shrike.—Ed.

fashion with its bill. It caught no bird during the several hours I watched it, but I noticed that no small birds were about while it was perched aloft there, though the neighborhood earlier in the season had been thick with Indigo-birds, Song Sparrows and Field Sparrows, and though later many sorts of sparrows were gathered here in large flocks.

Further up Dutch Hill where the narrow stony road runs between stone walls shoulder-high are buckwheat fields and bare pastures. There were always Vesper Sparrows, Field Sparrows and Grasshopper Sparrows on the ground and walls, and in the air Swallows swooping in great circles about the cattle. Toward the middle of August great flocks of Bluebirds loitered here on their way to and from the huckleberry barrens northward, filling the air with such gurgling music as I had never heard even in spring. And here on August 18 I came upon my surprise of the summer. I was coming down hill across lots when I heard behind me low calls of "weet, weet, weet," about like those of Horned Larks in winter, I thought, and turning I saw scudding close to the ground like sandpipers over water a flock of small birds with yellowish breasts marked with black. As they passed me I saw that their backs were grayish and that there was white on their tails. They lit, some on the ground, some on a stone wall, and walked. I was innocent of the knowledge that Prairie Horned Larks are sometimes seen in northeastern Pennsylvania until I got home to the books and I was utterly unable to identify the birds. The owner of the lot, lifting great boulders out of the ground with a great tripod and lever arrangement, was appealed to. He said, "Only some kind of sparrows," and when I pointed out to him that they walked instead of hopping, he looked at me rather pityingly and said, "Don't sparrows walk?" But I was no nearer an identification than he, although had they not walked I would have thought him not so far from the truth, and guessed Dickcissels, for they seemed something like descriptions of these birds I carried in memory, and I had always been hoping that Dickcissels might come my way.

At Levis Falls, beyond Dutch Hill, and at Gravel's Swamp under Wismer were Solitary Sandpipers, for whose nests I

looked diligently in June on drift heaps on the margin and on the trees that had rotted off and fallen when the dam-breast was in repair and the dam full of water. It was not until Mr. Stone came up for a day in August that I learned that the Solitary Sandpiper nested in old birds' nests in trees* and that by my ignorance I had possibly missed a rare find. What a walk I had with Stone on August 11! It was a day of soaking drizzle but that did not matter, for Stone's taking me bogging would have gotten me almost as wet on a rainless day. In the swamp to which he took me, way up under the edge of the huckleberry barrens, we made a rare find. The swamp was full of birds, Swamp Sparrows and others not uncommon in such places in the region, but a number of small flycatchers bothered us. Neither of us had ever seen Alder Flycatchers in the field, but here were small flycatchers that were not Acadian Flycatchers or Chebees and that answered very nearly to descriptions and looked like skins of Alder Flycatchers. They were not wild at first, and we got several good looks at them. A distinguishing feature was the disclosure of grayish-white as they flew. I had been in this swamp several times before in June and July and I had not seen the flycatchers there nor did I see others like them afterwards. We had seen them in alder bushes too.

There were interesting birds other than the Solitary Sandpiper in Gravel's Swamp. Scores of the water-killed trees still stood and in their rotting trunks scores of Woodpeckers had drilled out their nests. I was disappointed at not finding the Pileated Woodpecker here, for I had seen one at Buck Hill in September, 1903, and I thought this swamp was near enough to the large timber northward to make it possible for the logcocks to come here. The only two woodpeckers I found nesting in the swamp were the Flicker and the Hairy Woodpecker. But in old woodpeckers' holes I found Bluebirds and Wrens nesting, three pairs of Bluebirds and two pairs of Wrens. I suppose it was in such places they nested before Europeans came here to tempt them by boxes and gourds to the homeyard. Here in the swamp were many Song Sparrows and Swamp Sparrows, and along its

* Cf. Raine, *Ottawa Nat.*, XVIII., p. 135.

shores some Veeries and Pewees, and often in the burnt woods above I heard the Chickadees, who, by the by, sang their "phoebe" song the whole three months of my stay in Barrett township; and here, too, was seen an occasional Crow and Blue-jay. I was surprised by the comparative rareness of these birds and I was disappointed in not seeing a raven all summer long. The nearest I got to a record was the statement that there had been caught up in Newfoundland in Pike County seven years before in the winter "a big crow with heavy feathers on his neck that some said was a raven." This bird was kept in captivity a long while in "a big chicken-wire cage." It was not known what had become of him, but "he was not about any more."

In Gravel's Swamp the White-bellied Swallow nested, too, in the old Woodpeckers' holes. They stayed in the neighborhood later than either of the other Swallows, and as late as September 6 I saw six of them hawking about high over the tannery dams at Mountain Home. Here, too, in Gravel's Swamp were Redwings, and at Price's Pond a mile away, but there were few in all. Here, too, came Great Blue Herons to fish, but they nested elsewhere, and here, too, I saw one of the only two Green Herons I came upon all summer. In a grassy swamp a half mile below Gravel's Swamp I sometimes saw the Redwings, and in the fields nearby a pair of Meadowlarks. There were only three places in Barrett township in which I saw Meadowlarks, and in only one of these places did I ever see more than two. There were no Grackles here, but at Stroudsburg, seventeen miles southeastward, at a lower altitude, and at Tobyhanna, eleven miles westward, at a higher altitude, I saw them. The Cowbirds were the only orioles at all plenty near Buck Hill.

The huckleberry barrens were very interesting to me. I visited them frequently from the beginning of my stay, flushing Grouse* from those parts of them that had a chance to grow up more than knee-high, and always finding on them Chewinks and Redeyes and Bluebirds and Flickers and Robins—the last

* Ruffed Grouse, *Bonasa umbellus*.

These same barrens were one of the last resorts of the Heath Hen, *Tympanuchus cupido*, which was last seen here about 1869.—ED.

three species attracted there no doubt by the berries. On September 13, after I had not seen a Wood Thrush or a Hermit Thrush for three weeks, and had concluded they had all worked down to the river valleys as the theory is, I found one individual of each species on the barrens. A few days earlier I had come upon flocks of Chewinks and Bluebirds and many Flickers and several Tanagers—these latter all in green plumage—on the barrens, and in the second week in September on an automobile ride up the Delaware to Milford and back I had seen few birds of any kind, save Crows and Bluejays. Indeed, during the first two weeks in September the barrens were fairly alive with birds, while in the woods at Buck Hill, 500 feet lower than the barrens' 2,000 feet, there were very few birds. There were occasional Brown Thrashers to be met with on the barrens, but everywhere about Buck Hill they were scarce.

The bird that drew me most often to the barrens was a small Thrush, whose only possible identification would seem to be as Bicknell's Thrush. I know the songs of the Wood Thrush, Veery, Hermit Thrush and Olive-backed Thrush, and the song of this bird was not the song of any of these. Either I never heard it close at hand or else it is a song of poor carrying quality, for it always seemed as if I but half heard it. I had only one look at the bird at close quarters, but several times I flushed it in the scrub only to have it dive into the thick growth and elude me. I started out several times before daylight and reached the barrens by sunrise, but I was not rewarded by seeing the bird as it sang or even by getting another satisfactory look at it. I mention the bird only because Mr. Carter and Mr. Baily have seen Thrushes they take to be Bicknell's Thrush in the southwestern Poconos.*

The two hard winters of 1903-04 and 1904-05 probably explain why I never came across a Quail, but I cannot explain so easily why I never saw the sign of an Owl. It was not their noisy season when I was there, but that I heard not a hoot or the startled beating of wings as I came through brush after nightfall or that I discovered no tragedies of the nests to be

* Cf. CASSINIA, 1904, p. 35.

attributed to Owls, struck me as surprising. Hawks were not plenty until late in August, nor as plenty then as I had expected. I identified only three. A Red-tail, nailed to a barn door, had noticeably been there long enough to have been a migrant; a pair of Broadwings added to their family by at least one during the summer; and these were Sharp-shins, of which I saw a good many all summer, but more towards its close. I saw several other kinds I could not identify, one a very long-tailed large hawk that soared very high, and now and then hung quivering in the air for what seemed minutes.

Towards the end of August came great flights of Night-hawks, but in early and midsummer I never saw more than two at a time. Their cry was not a typical sound of the night—you would hear it only about once a week. Toward the end of August, too, the Doves began to collect in little bunches, but I never saw more than half a dozen together, and it was generally two or three. They were only fairly common.

A refreshing experience was to find familiar birds with songs differing in quality and even in notation from their songs at home. The characteristic Robin song of the Buck Hill woods, for instance, was very much more subdued than the characteristic Robin song of Germantown. The bird was much less noisy and self-assertive, and since there were no lawns for him to run over, his habits of hunting were different. He ran about on the leaves of the wood-floor, upturning one now and again with his bill, and at times even scratching as noisily as a Chewink. He came under the shack windows for the boiled barley we threw out, as did, curiously, the White-bellied Nuthatches that were about us daily after the middle of July. The Wood Thrushes' songs were of more varying quality among themselves than our home Wood Thrushes' songs. One particular Thrush's song had an extra grace-note in its second part and the whole song was of so rich a quality that you would think it some new Thrush song, and be sure of it for a while if you heard first its second part. The Field Sparrows' songs were unusually fresh and full, and the Indigo Buntings' songs of more body than I had heard before.

After July came in the evenings and mornings were not

nearly so loud with song as were June's. The Whip-poor-wills were much quieter, and after the middle of the month they were but infrequently heard. After the middle of August I heard no "Whip-poor-will" until there came a springlike night in early September, a night of south wind and soft rain, and then again the Whip-poor-wills called and an Ovenbird sang its "teacher" song and its flight-song as if it were May. The Great-crested Flycatchers disappeared to a bird with June, and I saw none afterwards the whole summer. The Chebecs were abundant and noisy after July 1, though less and less noisy as the month wore on, until about the fifteenth they disappeared as the Great-crested Flycatcher had disappeared two weeks before. However, I saw a Chebec and heard him on August 2, and two days later a pair with three young came about our shack. These young were barely able to fly, so they must have come only a little distance from the nest. I suppose some accident had befallen a previous nesting, and the old birds had begun over again late in the season. But if, as I think, they had nested somewhere nearby they must have been very quiet, which is anything but after their custom. The Pewees and Wood Pewees and Kingbirds were still about when we left, fewer Kingbirds than Pewees and Wood Pewees, though for that matter there were fewer all season.

Seventy-three species identified is the total of my list, a list that might have been added to considerably by one who knows more birds than I, and who had more time to give to observation. My chief disappointment was in finding so few Hermit Thrushes and so few Veeries. I found that the Veeries went higher in this immediate neighborhood than the Hermit Thrushes. Both species were much scarcer than they are in the southern Berkshires (Mt. Washington town), a county whose avifauna is much like this of the northern Poconos, but, as you would expect, a little more northern, though scarcely more northern than that of the Tobyhanna district just above Buck Hill. These upper branches of Broadhead's Creek rise in a country that sixty years ago was Canadian in its fauna, and flowing from two to six miles, reach Barrett township, a country then Alleghanian in its fauna, but now that the original

forest is almost all gone, largely Carolinian. This forest-cutting began about 1840, and went on steadily until practically all the marketable lumber was exhausted about 1880. So about Buck Hill you find a few stragglers from the Canadian fauna, the survivors of the old Alleghanian fauna and many intruders from the Carolinian. The country was most interesting to me ornithologically in that it gave me the chance to know better three birds I had scarcely known at all, and of a charm that I had not been led to expect—the Eave Swallow, the Louisiana Water Thrush and the Blue-headed Vireo—the last, one of our really notable American singers.

Breeding of the Florida Gallinule (*Gallinula galeata*) in Philadelphia County

BY RICHARD F. MILLER

THE Florida Gallinule is given in Stone's "Birds of Eastern Pennsylvania and New Jersey" as a rare or irregular transient and there is apparently nothing further on record regarding the bird's status in the Delaware Valley. There are some additional records of birds shot, but all of these are evidently migrants and in no sense modify the statement referred to. During the past two seasons it has been my good fortune to find this species breeding not only in the valley of the Delaware but within the city limits of Philadelphia, and the account of my experience which follows apparently constitutes the first record of the breeding of this species in either Southern New Jersey or Eastern Pennsylvania. As to its occurrence in summer elsewhere than in the limited area covered by my investigations I cannot speak, but from the fact of its being overlooked in this spot and its nests being attributed to the King Rail (*Rallus elegans*), it seems quite probable that the same thing has occurred elsewhere and that not a few of the recorded nests of the King Rail really belong to the Florida Gallinule, which may yet prove to be a not infrequent summer resident of our river marshes. So difficult are the birds to flush and such admirable concealment do the marshes furnish that the overlooking of the bird is hardly to be wondered at.

The marsh where I have found the Florida Gallinule breeding is the largest one left in the northeastern section of the city, and is situated at Richmond, less than five miles from the City Hall. It comprises about twenty acres, and lies between Westmoreland and Tioga streets, and the banks of the Delaware river. It has been divided into three parts by the intersecting of two streets and a canal. The smallest and less important marsh,

about two acres in area, lies along the river bank between Tioga street and the canal, its western boundary consisting of a dump. It is inhabited during the summer months by several pairs of Marsh Wrens (*Telmatodytes palustris*). It is the deepest as well as the smallest marsh, but the water is polluted with the refuse from a nearby paper mill, which accounts for the absence of water birds.

Intermediate between the canal which is used by a paper mill as a reservoir and not for transportation purposes, and Ontario street lies the next largest marsh which comprises about six acres or more. Its eastern boundary is the river bank and its western a dump. It is covered with a thick, dense, tangled growth of tall cattail rushes growing in mud and water about a foot in depth.

Many a time have I searched this marsh for nests of Rails and Least Bitterns but without success, except on one occasion, on May 29, 1903, when I found a Virginia Rail's nest, which, however, was subsequently deserted. The Long-billed Marsh Wrens are the only birds that I have found nesting in it during the last two years. The Least Bitterns have on several occasions been observed flying to and from the marsh late in July and early in August, after the breeding season, and had doubtless been feeding there.

The main section of the marsh lies between Westmoreland and Ontario streets. The two streets are dirt-covered sewers, unopened and used only by casual pedestrians to and from the river. The river bank carries a railroad which is daily used by a noisy shifting engine, and a large dump on the west is worked daily by numerous men and boys.

In the immediate vicinity of the marsh there are several large manufacturing plants. This marsh is covered with a growth of calamus and cattail, with some spots of open water and numerous patches of spatterdock mostly along the borders.

Sphagnum floats on the surface of the water in many places or just below it, and duckweed on some days fairly covers it. The marsh is about six feet below the surface of the streets, and is drained by several sluices, the water rising and falling with the tide in the Delaware River, and is thus always

fresh, while the sluices incidentally admit many fish, which form the chief food of the Gallinule, if not of the other water-birds, and may account for their presence here.

My acquaintance with the Florida Gallinule began on June 1, 1904, when, while hunting for Least Bitterns' nests, I suddenly flushed a Gallinule from a patch of rushes I had just entered. It took wing about fifteen feet ahead of me and flew, bittern-fashion, with dangling legs; but unlike the Bittern it did not utter any croaks of alarm, and after flying about ten yards dropped into another patch of rushes.

This is the only Gallinule I ever succeeded in flushing and I must have greatly alarmed it to compel it to seek safety in flight. Many times afterward have I chased and pursued these wary birds through the rushes, always guided by their cries, in vain attempts to compel them to take wing so that I could note their mode of flight—but always without success. In fact it is a difficult matter even to obtain a glimpse of one as it skulks about among the vegetation.

My first nest of the Florida Gallinule was found on June 14, 1904. It was situated in a clump of thick cattails seven feet high, well in the marsh, placed on and over water two feet deep, and attached to several of the growing stalks. It was a large nest, well-built and shapely, composed of coarse dry rushes woven together, lined with dry thin tops of rushes and dry marsh grass. Outside width sixteen inches, inside twelve inches, depth outside seven inches, inside three inches. It will be seen that the bottom was four inches and the sides two inches in thickness—thick enough to keep out the dampness. The bird probably left the nest as she heard me approaching through the rushes. The incubation of the eggs varied from fresh to well begun. While taking the eggs and measuring the nest, the bird was heard cackling continuously in the rushes close by, and kept it up until I had left that part of the marsh. The nest was ruined in a vain attempt to collect it.

On June 21, 1904, I found a completed Gallinule's nest in this marsh near the spot where I found the preceding one, and I feel sure it was the second nest of the same pair of birds. One bird was seen near the completed nest, a mere glimpse

however, as she skulked about amid the rushes, incessantly uttering her hen-like cackle. Ten days later, on July 1, the nest contained ten eggs, which seems to prove that the Gallinule lays her eggs daily.

This nest was placed amid dense, tall cattails seven feet high, over water one and one-half feet deep, securely attached and woven to the stems of the rushes. It was composed of dry rushes, woven tightly together, lined with fine dry marsh-grass and dry dead heads of rushes. Like the first, it was well built, compact and cupped, but slightly smaller. Outside width twelve inches, inside eight inches; depth outside ten inches, inside three inches. The bottom of this nest being seven inches thick, protected the contents from the dampness and cold during the bird's absence. This second nest was about ten feet from the site of the first, and both were less than twenty-five feet from the dump.

The bird evidently departed hurriedly from her nestful of eggs as she heard me approaching, for one egg reposed on top of the others, probably lately laid. She cackled all around me in the rushes, but I endeavored to flush her in vain.

No Gallinules were observed or heard on July 12, 1904, when I searched for them. I certainly did not intrude upon the domain of any or I would have heard their noisy calls, for as soon as a person approaches the vicinity of their nest, one of the birds, probably the female, ever alert and on guard, begins to cackle her alarm, and only ceases when the intruder leaves the vicinity.

In 1905 my experiences with the Gallinules were as follows: On May 31, I collected a set of twelve eggs from a nest situated in the center of a large patch of tall cattails well out in the marsh. It was placed half-foot up on some old last year's dried rushes, attached and woven to the growing stems, and over water about two feet deep. This nest consisted entirely of last year's dried cattail leaves woven loosely together, lined with the same sort of material. It was large and well built. Maximum outside diameter eighteen inches, inside ten inches; outside depth seven inches, inside three inches. Five of these eggs were about one-half incubated, and the rest three-quarters. I

should judge that the last egg was laid about May 17, which would give May 6 as the day upon which the first one was deposited. This nest was too loosely constructed to collect; when I tried to take it, it fell apart. No birds were seen or heard at or near the nest.

In that part of the marsh where I found the two Gallinules' nests in 1904, I again found one on June 12 of this year, containing three eggs. The bird cackled in the rushes close by while I examined her nest and eggs, but she could not be seen or flushed. Nine days later, on June 21, this nest contained eleven eggs, none of them over one-third incubated. This nest was about thirty feet from the dump, situated in a solitary clump of rushes less than a yard in extent, in a "pool" of open water, which in turn was surrounded on all sides by thick cattails. It was similar to the others in position and construction, but not so well built. Outside diameter nine inches, inside five inches; outside depth four inches, inside two inches. This nest is considerably smaller than the three others described.

An egg in this set was laid upon the others, and as it was fresh it was evidently the last one laid, and I disturbed the bird from the nest before she had time to arrange it with the others.

This bird laid eight eggs in eight or nine days, and undoubtedly laid the complement of eleven eggs in as many days. While collecting the nest and eggs the bird uttered her characteristic hen-like cackles from the rushes all around me, but I could obtain no glimpse of her.

On the day this nest was first found, June 12, I found another, in the same sort of situation and apparently completed and ready for eggs. It was afterward, however, considered to be a sham or false nest, as no eggs were laid in it, and only this one pair of birds inhabited this part of the marsh. The Florida Gallinule seems to have learned to construct false or sham nests like the Least Bittern and their midget companions, the Marsh Wrens.

Another apparently completed Gallinule's nest was found on June 22, situated in a small "islet" of rushes, two feet in area in an open space of water, several yards in extent, surrounded on all sides by dense patches and clumps of cattails. The bird

cackled her alarm at my intrusion, but it was impossible to see her. Hiding myself amid a dense clump which afforded a view of the nest I waited and watched for over twenty minutes for the bird to emerge, but I waited in vain. During my watch she continually cackled all around me, quite well aware of my presence and doubtless also of my intention. Suspicious, wary birds, possessed of more cunning and intelligence than the stupid Least Bittern—for a ten minute wait would suffice for one of the latter birds to approach its nest. Though I had not the pleasure of observing the bird as I wished, I learned to know its noisy cackle better than ever.

On this afternoon I found another Gallinule's nest, in a different part of the marsh, situated amid a large, dense patch of cattails seven feet high, built just like the others. It contained only four eggs, two collected and preserved as they were rotten and worthless to the birds. The other two were pipped, and the point of the bill of a young bird protruded through the shell of one. The old bird was seen closely and well. She was absent when I found the nest and I was about to leave it, having completed my examination, when she put in her appearance. She was terribly excited and solicitous for the safety of her home, and judging from her peculiar actions she was coming straight toward her nest unaware of my presence, for I heard an alarmed series of guttural cackles and glancing in the direction whence they came I spied the bird not more than ten feet away behind a screen of rushes. She was in the water, uttering series after series of incessant cackles. She splashed, dove and jumped about and ran apparently on the surface with drooping wings, the object of the whole performance being evidently to attract and divert my attention from the nest. When she realized that all her clever tricks failed to deceive me she swam quietly about in small circles, but continued cackling. I endeavored to approach closer, but she quickly divined my intention, and ere I had advanced three steps she swam rapidly away and disappeared.

Some accident undoubtedly befel this bird's nest, for the Florida Gallinule seldom or rarely lays less than seven or eight eggs in a clutch.

About one hundred and fifty feet from this spot I found an-

other Gallinule nest the same day. It was situated among cat-tails seven feet high. It was twenty-two inches above water at high tide, and was well concealed on nearly all sides by the drooping blades, the tops of which blown over by the wind hung directly over it. It held ten eggs, nine of which contained young birds as was ascertained by gently shaking them and five were actually pipped, the other egg was rotten. All of the eggs were discolored due to nest stain and the advanced stage of incubation.

The bill of one young bird protruded through the eggshell and as I took it from the nest, the young bird peeped from within. I peeled the shell from around him except a small piece to which adhered the membranous lining and as this was also attached to the abdomen of the bird I was afraid to separate it from the body.

He was covered with black down, wet of course, but which when dry must have been soft and downy. Its bill was flesh-colored and its frontal shield (what there was of it) and the base of the bill pale vermilion in color.

No birds were seen or heard near this nest, though I waited about fifteen minutes, as long as the mosquitoes would permit, for the female to put in her appearance. All of these eggs were undoubtedly safely hatched and the young bird probably lived, for on my next visit to this marsh early in July I found the nest empty.

On the day this nest was found I had the good fortune to observe one of the Gallinules. I was standing on the dump, having just left the marsh when I spied the bird emerge from a clump of rushes and sedately and slowly walk across an open space of water between two clumps of rushes about twenty feet wide, into the opposite one. It walked upon the thick sphagnum and seemed to rest upon the water. Almost as soon as it left the clump of rushes it noticed me watching it, but evinced no alarm nor did it hasten its progress, but went unconcernedly on, and as it walked, kept up a continual hen-like cackle. After it had disappeared into the patch of rushes I pursued it, always guided by its guttural cackles, for about five minutes in another vain effort to flush it. The bird seemed to realize my purpose

and tantalizingly led me on through the thick patch of rushes, always keeping several yards ahead, judging by the cackling cries, but always out of sight.

In July I found several Gallinules' nests, but they were all sham or false nests. Two of them were situated amid calamus, placed on the rushes which had been blown into a horizontal position by the wind. Both were along the border of the marsh and were loosely constructed, shallow and poorly built.

The Florida Gallinule has various calls and cries, but the most common which it utters when alarmed or on the presence of any one near or at its nest, consists of a series of cackles, remarkably hen-like, uttered incessantly, and only ceasing when the intruder has left the vicinity.

The set of ten eggs collected on June 14, 1904, now in the extensive collection of Mr. J. Warren Jacobs, of Waynesburg, Penn., has been kindly described by him for me as follows:

The ground color is uniform throughout the set, a dull pinkish buff, with a tendency toward light wood-brown. The markings are scattered pretty evenly over the entire shell, in splotches, spots and minute specks of ecru-drab, lavender-gray, and chestnut-brown of equal distribution. The shape is irregular, varying throughout the set, from elliptical-ovate to elongate-ovate. While most of the eggs vary from true elliptical-ovate by having a slightly blunt small end, two are typical elongate-ovate. Size 1.85x1.26, 1.81x1.21 (elongate-ovate), 1.78x1.23, 1.83x1.23, 1.83x1.26, 1.79x1.25, 1.73x1.26, 1.83x1.27, 1.83x1.26, and 1.82x1.25 inches.

The eggs of the Florida Gallinule and King Rail are usually described as so greatly resembling each other, that it is almost impossible to distinguish them. As a matter of fact, in my experience, the eggs of the former bird are larger in size, the ground color considerably darker, and the markings also of darker coloration. When compared with a set of King Rail's eggs in my collection the differences between the eggs, notably the size, are readily discernible.

The earliest date of arrival of the Gallinule, of which I have a record, is April 21, 1905, on which day a man captured one in a concrete box at Clearfield and Cedar streets, less than half a mile from the Richmond marsh.

Mr. Edwin C. Axe, the well-known Frankford taxidermist, who has hunted and mounted birds for over forty years, informs me that he has never met with the Florida Gallinule, but said that he had mounted two for a gunner, both killed years ago in the meadows at Bridesburg during the breeding season.

The gunner, he said, flushed the first bird in a marsh and shot it. His dog going for it flushed another which he also shot. Becoming suspicious of the true state of affairs he investigated and had his suspicions verified by finding a nest containing two eggs, which he collected. He brought the specimens to Mr. Axe, who mounted the birds and blew the eggs, after vainly trying to coax a bantam hen to brood them. These two birds are the only Florida Gallinules that he has ever seen, and he attributes their apparent scarcity to the fact that gunners seldom shoot them on account of the almost impossibility of flushing them without a good dog, and to their early migration, which he considers takes place in August, before the opening of the Rail bird season in September. I do not know when the Florida Gallinules migrate, but have never heard one in the marsh after early August.* Whether they had departed for the south or became silent I do not know. Mr. Axe's description of the eggs coincides with my eggs, as well as the site and composition of the nest.

Several gunners whom I have interviewed for information relative to the Florida Gallinule all agree that it is a rare bird seldom seen and still more rarely shot. All that they have ever seen or shot have been on the marsh at Richmond in spring and summer, none later than August. Not one of the gunners knew the species as Florida Gallinule, though Mr. Axe did, but they called it Water and Mud Hen, or Red-billed Water Hen.

The existence of the marsh where the Gallinules breed will be of short duration, as the dump is rapidly encroaching upon it and is diminishing its size at an alarming rate. In two or three years, at least, it will be a thing of the past and its feathered denizens gone to parts unknown.

* There are, however, September and October records in Stone's *Birds of Eastern Pennsylvania and New Jersey*.



Location of the Media Grackle Roost.

The Media Grackle Roost

BY SANFORD OMENSETTER

THE Purple Grackle, or Crow Blackbird (*Quiscalus quiscula*), is our most punctual spring migrant. Observations during twenty years have invariably found it in Delaware county by March 1st. Essentially a social species, this trait is nowhere better set forth than in the habit, outside the nesting season, of assembling in vast flocks to pass the night.

For a number of years Media and vicinity have held special attractions in the way of roosting-places for the Grackles. Some two decades ago, especially toward the western gate, where the imperial *Paulownias*, "born to the purple," stood file-leaders to rows of stately maples, the Court House Square re-echoed nightly with their not unmusical chatter. As neighbors, great numbers of the Chimney Swift (*Chaetura pelagica*) roosted in the recesses of a large, unused chimney on the Court House. But a storm came and crushed the maples so badly that most of them had to be removed, and a capstone was placed upon the chimney, so that both sets of lodgers reluctantly took their leave. The Swifts scattered through the town and the Grackles frequented Rowland's wood and the woodland along Kirk's Lane, on the hillside west of Media.

Just previous to this, Third street in Media had been continued westward across the valley which until the early 70's contained the borough water-works, and the grading turned Broomall's Run, an unpretentious stream, into a lake of several acres' extent. On the eastern side of the lake and stream the old "Camp Meeting Woods," principally chestnut, was wrought up for commercial purposes. For several years this cleared area was a fine harbor for rabbits, but as the chestnut sprouts grew apace, the discerning Grackles came each year in larger hordes until, of late years, in the autumn, they might be num-

bered by tens of thousands. Their daily arrival and departure have become a feature of our borough life.

None so soon to waken as our feathered foragers : even while the stars stand sentinel at the gates of the summer morn, all is bustle in the colony. Upon their sallying forth, quiet reigns until, toward sunset, when the long platoons wend their way from different feeding-grounds toward Media. Ever and anon a detachment will suddenly dive and resume flight at a lower level, while before repairing for final rest a number frequent the headwaters of the lake, bathing or drinking, and chattering as if exchanging gossip of the day.

Why this locality should have been selected for roosting purposes remains an open problem. The presence, in years past, of a goodly array of coniferous trees, a half-mile distant, in Media Cemetery, may have had some bearing. As such trees grew scarcer, and the progeny reared in their branches became more numerous, lack of lodgings may have brought a dispersion and final abandonment of that secure retreat.

The Pennsylvania Legislature, by Act of April 22nd, 1905, removed the Grackle from the list of hitherto protected species and classed it among the game birds, with an open season from September 1st to the first day of January following. The increased activity of gunners has led the greater number of the birds to desert their accustomed haunts and pre-empt safer quarters in the evergreens and taller trees in the western part of the town. From these the southward passage was taken on November 1st, and but few stragglers have since been seen.

Of sombre plumage, songless, detested by the farmer, a pilferer of the nests of other birds—still we feel we cannot do without the Grackle. His arrival tells us that winter has been passed, and is a prophecy of the halycon days to follow.

SUPPLEMENTARY NOTES.

The number of birds frequenting the Grackle roost at Media has been very much smaller this autumn than usual. The repeal of the law protecting the Grackle has had a very demoralizing effect.

For sometime after the birds began flocking to their accus-

tomed place, scarcely a morning or evening passed when they were not startled by the report of a gun. A few feathers here and there in the woods would seem to indicate that some of the birds, at least, must have lost their lives.

A local paper is authority for the statement that some persons actually resorted to the unsportsmanlike practice of shooting them after they had gone to roost. The consequence is that the birds were greatly disturbed and scattered. In fact the disturbance has continued during the past two or three years notwithstanding some effort to prevent it. Our home is so situated that the birds flocking in at night from the south and west pass over or near us and it has long been a delight to hear and watch them coming. We have often seen unbroken streams of blackbirds extending from the roost westward as far as we could see, an air-line of something over a mile, and these great streams would usually last for some minutes.

On October 15, 1905, I visited the roost from 5:15 to 5:45 p. m. and saw only about one hundred birds which flew about but did not, I think, roost here finally. Some Grackles found shelter for the night in the trees of the Friends' Meeting-House yard, and continued to congregate there until November 18, but on subsequent visits to the old roost no birds were to be seen and it is my opinion that it was entirely abandoned this year for sometime prior to the departure of the birds for the south.—*Lydia G. Allen.*

In the late autumn of 1894, I visited this roost about dusk. The birds were there by thousands and had apparently nearly all come in but had not yet quieted down for the night. In fact, nearly every bird seemed to be calling and the resultant sound at a distance of a quarter of a mile closely resembled the steady discharge of steam from a gigantic locomotive. It is sad to think of the passing of such an impressive ornithological phenomenon.—*Witmer Stone.*

The Overbrook Grackle Roost

BY C. J. PECK

THE Overbrook Grackle Roost is situated upon the property of Mr. David L. Hess at the corner of Sixty-third street and Lansdowne avenue, Philadelphia. The estate comprises about ten acres, is rolling and wooded and has an artificial lake of about an acre in extent. The trees are deciduous with a goodly sprinkling of conifers and are of fair size. The roost has been in constant use for more than twenty years—how much more I have been unable to ascertain.

January.—Fewer birds use the roost during this month than at any other time of the year. On a few very severe nights the roost may be deserted, but such nights are rare and usually four or five hundred birds remain throughout the month.

February.—The first three weeks of the month are very similar to January, the number of Grackles varying from none to several hundred according as the weather is mild or severe. During the last week of the month the migration begins and the number of birds is considerably increased by early arrivals from the south. Probably five thousand birds use the roost during the last few days of February.

March.—The number of birds rapidly increases throughout the month until from twenty to twenty-five thousand are using the roost nightly.

April and May.—About April 15th, as the birds mate and nest-building begins, the numbers grow fewer and continue in a steady decline through the month. Comparitively few birds visit the roost in May, but the number never seems to fall below two or three thousand—birds which have not mated as yet or else males which have nests near by, probably both. Mr. Hunt's observations at Fifty-sixth and Jefferson streets seem to agree with and emphasize the above.

June. June is very much like May except that very few

females visit the roost and towards the last of the month young birds begin to come in in company with the males.

July.—Most of the birds come to the roost as family groups during July. At this time of year they do not follow any regular lines of flight but come in from every direction, mostly flying low and often stopping to feed along the way.

August.—All this is changed soon after August 1st. The birds have for the most part completed their domestic cares and family groups are rapidly consolidated into large flocks which come to the roost from considerable distances. The numbers are very greatly increased and the birds in flying to and from the roost follow much more closely a regular well defined route.

September and October.—During September and October the greatest numbers are reached and the birds come in at night in great flights, one flock following another so closely as to give the impression of a single long-drawn-out flock. The flight begins about 5:30 p. m. and lasts for about twenty or twenty-five minutes, but scattered birds and small flocks continue to come in until dark. I believe that from fifty to seventy-five thousand birds visit the roost every night during these two months.

November.—The birds come regularly to the roost until they begin to go south about the middle of the month where two or three nights are sufficient to finish the large flights.

December.—Quite a number of birds remain over into December, probably double the number to be found in January but upon very cold nights they are quite likely to be entirely absent, returning again as soon as the weather moderates.

Robins use the roost to the number of one thousand or more, their numbers being hard to judge with any degree of accuracy on account of the way they mix with the Grackles.

On a visit paid to the roost on September 17th, I was surprised at the large number of birds which still showed marked evidence of the molt. While fully one-fifth of the birds lacked one or more flight feathers, this number was insignificant compared to the number showing faulty tails. Not over one-tenth of the birds observed had tails which could be called even approximately perfect.

Birds whose tails were fully developed seemed to have the

wing feathers equally perfect, but when the tails were only partly grown the wings might be equally backward or perfectly developed, depending, apparently, somewhat upon the growth of the tail, the wings reaching full size first.

About one-half the birds with imperfect tails had all the feathers present and of perfect form but one to one and one-half inches long; one-fourth had a short new tail like the above but with one or more of the old feathers sticking far out beyond the end of the new ones; while the remaining one-fourth had tails of every conceivable growth, many being without any tail at all.

All the Robins which I observed were in full plumage.*

No Red-wings have been known to visit the roost with the Grackles but several Screech Owls seem to be entirely at home there. I have heard as many as four calling at once and do not doubt that double this number might be found in the vicinity.

The following notes on the evening flights were taken September 17th :

5 p. m.—No birds in sight and none to be heard. Very few birds seem to remain near the roost during the day.

5:35 p. m.—A few small flocks are coming in, but not to any extent as yet. As they arrive they keep up a constant calling and shifting from tree to tree.

5:50 p. m.—A flock of 1,000 just arrived with a great deal of calling and commotion.

5:55 p. m.—Large flight now beginning from the northwest and birds are coming in, in a steady stream.

6 p. m.—Still larger flight from the northwest now begins. Birds continue to come in from both the flights already noted and also from a southwesterly direction. There are now probably 20,000 birds on the place.

6:10 p. m.—50,000 birds now here. They are continually shifting about in the trees and 1,000 to 1,500 are walking about on the lawn.

*Specimens that I have examined indicate that adult Grackles are later than the juvenal birds in completing their molt. Some secured October 22 have the tails only three-quarters grown. Old and young Robins molt about the same time in August and September, and are through earlier than the adult Grackles. Young Grackles, moreover, have a complete molt at this season, while young Robins do not molt the wing and tail feathers.—ED.

6:15 p. m.—3,000 birds on one small section of lawn. They do not seem to be feeding, merely waiting for darkness.

6:20 p. m.—The flight is about over and the birds are walking about on the lawn or flying about in the trees keeping up a continual clatter. There are a few Robins on the lawn with the Grackles but they are silent. Only rarely is a Robin heard.

6:30 p. m.—Only a few hundred birds now on the lawn and the birds in the trees are at least a little less noisy. As it grows darker under the trees the volume of sound grows gradually less. As the Grackles subside the Robins can be more plainly heard and at the present time (6:35) about five hundred are calling. They are scattered all about among the Grackles.

6:45 p. m.—Darkness and silence reign.

The gardener employed upon the place, informs me that after the storm of September 13th, he picked up over a peck of dead Robins—50 or 75 birds or about seven per cent. of the number then using the roost. Not one Grackle was found dead although they outnumbered the Robins nearly 100 to 1.

On the morning of October 2nd I had an opportunity of observing the birds of the northwestern flight as they left the roost. They flew as a single flock, stretching out in a long column from 50 to 100 feet wide and were ten minutes in passing over. There were no Robins in this flight. They leave the roost in small scattered flocks and in pairs, from fifteen to thirty minutes ahead of the Grackles.

December 18, 1905.—With considerable regret I am compelled by conditions at the roost to add this final observation, probably the last that will ever be made at this roosting site.

Extensive building operations accompanied by heavy blasting, and the reopening and enlargement of several quarries in the vicinity of the roost has had its inevitable result, and the Overbrook Grackle Roost as an extensive roosting site is a thing of the past.

These heavy blasts have left their mark upon the entire bird life of this vicinity. Numbers are much diminished and often the birds seem dazed and listless. I have several times picked up birds stunned by the concussion of some of the heavier shots and unbatched eggs have been very common the past two years

June Birds of Fulton County, Pa.

BY WITMER STONE

A COUNTY without a railroad would seem to be an attractive spot for a lover of nature, and Fulton being distinguished in this way from all the other counties of Pennsylvania, claimed our attention for a few days in June, 1905. Dr. Wm. E. Hughes and William L. Baily had planned the trip in the hope of learning more of the breeding habits of some of the Warblers and other Alleghanian species which occur along the broken chains of the Appalachian system farther north in the state, and it was my good fortune to be able to join them.

We left the sleeper early on the morning of June 3 at Chambersburg and travelled to Mercersburg on a winding single-track road through a rich agricultural district with alternating fields of ripening wheat, timothy grass and growing corn. It was a clear, cool, delightful June morning, and the familiar notes of the farmland birds floated in from every side. One could make up a good day's list from ear alone without leaving the car; and with the familiar songs came the oft-recurring reflection—what was such a region like in the primæval days? What were the original haunts of the Barn Swallow and the Chipping Sparrow? And what was the native flora of the farmer's acres where everything is now either cultivated or a weed? Questions I fear which will not soon be answered.

But the country through which we had just passed brought up other thoughts as well. The region is historic, for this was the boyhood hunting-ground of Prof. Spencer F. Baird, and from his home at Carlisle, before any thought of the Smithsonian or the Fish Commission had entered his mind, he roamed over these valleys and onto the hills which skirt them, gathering the materials for his *List of the Birds of Carlisle and Vicinity*, published in 1844—one of the first local lists of Amer-

ican birds, and one which set the standard for the hundreds that have followed.

Arrived at Mercersburg, we made the last stage of our journey by wagon over the Tuscarora Mountain, which marks the eastern boundary of Fulton county, and down the other side into another valley much like the one we had left to McConnellsburg, the county-seat, where we made our headquarters. The Tuscarora Mountain is a steep, narrow, outlying ridge of the Appalachians, nearly flat on top, and well wooded with deciduous trees and bushes. Red-eyed Vireos, Ovenbirds, Chewinks, Wood Pewees, and other typical woodland birds, were heard continually, and the clear song of the Hooded Warbler accompanied us quite to the summit. Here, also, we later found some feathers of the Wild Turkey and spots where the noble birds had evidently been scratching about among the leaves. This is a well-known Turkey country and not a few are yearly brought in by the gunners.* Rattlesnakes are also of frequent occurrence, and several recently killed were to be seen along the roadside. And on the top of this same mountain we had one of those tantalizing and yet instructive experiences that now and then fall to the lot of the bird-student. A new note came to us from the tree-tops, something different from anything with which we were familiar. A tiresome search failed to obtain a good view of the songster, and the gun was finally brought into play, when, lo, we had before us a Red-eyed Vireo!

The valley in which nestles the village of McConnellsburg we found to be to a great extent Carolinian, as evidenced by the occurrence of such birds as the Tufted Titmouse and Cardinal Grosbeak, but on the ridges to the west, known as Scrub and Meadow Ground Mountain, we found traces of the Alleghanian fauna, in the presence of Chestnut-sided and Blackburnian Warblers, while a bog on the latter elevation sheltered a few

* Mr. S. N. Rhoads flushed a Turkey hen with a brood of young when crossing the ridge of mountains bordering the western side of Fulton Co., in June, 1894. Cf. Auk, 1899, p. 310, where date and range are wrongly given.

Mr. E. A. Preble, in June, 1893, found a nest with fourteen eggs in Somerset Co., Pa., some miles farther west. Cf. Judd, Bull. 24, Biol. Survey U. S. Dept. Agr.

northern species of plants. From the summit of Scrub ridge we looked off from a precipitous cliff over an immense cultivated valley stretching away to the western boundary of the county, where another wall of mountains interrupted the view, though above them we could see faintly outlined the main chain of the Alleghanies.

The view here was superb, and as an interesting foreground setting there was an old nest occupying a ledge in the rocks where they jutted out farther than usual, which we looked upon as a possible former home of the Raven, a bird which is well-known to frequent this vicinity. Far down below us, too, was a tall pine-tree bearing at its very summit a Red-tailed Hawk's nest containing two young, which we could study with ease by the aid of a glass, while the parent birds circled above and below us in great concern.

These ridges were all covered with deciduous trees or with pines—the pitch and Table Mountain pines predominating with some considerable patches of white pine. Those who ought to know told us that hemlock had never covered these mountains, and certainly there was no evidence of the noble forest which once enveloped the main Alleghanian plateau, and of which fragments still remain in Sullivan and Wyoming and Somerset counties, though rapidly disappearing to satisfy the greed of the lumbermen.

It was equally evident that we were too far east and at too low an elevation to expect more than a tinge of the Alleghanian fauna, and the event showed that our most interesting experiences were connected with one exception with southern rather than northern birds.

Toward the southeastern corner of the county the first valley becomes quite narrow, and eventually near Big Cove Tannery the mountains run together. In this section we found our most interesting birds, species which only at one or two points regularly cross the Mason and Dixon line. These were the Bewick's Wren *Thryomanes bewickii* and Red-bellied Woodpecker *Centurus carolinus*. We saw but one of the former, which flew about the barn and outbuilding of a farm-house, perched for a long time on the topmost twig of a buttonwood pouring out

his song, and then skulked away along a fence-row, scolding in the usual manner of the Wrens. The bird in its attitudes recalled the larger Carolina Wren, its song, however, was quite different, distantly reminding one of the Song Sparrow's ditty in the sudden rise at the beginning and the final trill, but it is shorter, more emphatic, and of a different quality. Mr. S. N. Rhoads had heard several of these birds on the top of Tuscarora Mountain in June, 1894, when he crossed the county on his bicycle. The Woodpeckers we encountered in a large walnut-tree in a meadow where they were making a great disturbance about some holes, one of which no doubt contained their young.

As we drove back to McConnellsburg we passed two birds sitting on the top rail of the roadside fence which we recognized at once as Prairie Horned Larks *Otocoris a. praticola*. We stopped, and as if to make identification doubly sure, the birds hopped down into the road and ran about close to the carriage wheels, feeding and chasing each other. They seemed evidently to be mated, and doubtless had a nest near by, for after some fifteen minutes they whirled away over the field to the east and disappeared. This is so far as I know the most southern summer record of this bird east of the Alleghanies.

The following is compiled from Mr. Bailly's lists, which during the four days contained a total of seventy-two species:

I. Birds seen in the valley about McConnellsburg—

Killdeer Plover,	Crested Flycatcher,
Bobwhite,	Phoebe,
Mourning Dove,	Wood Pewee,
Turkey Vulture,	Prairie Horned Lark,
Yellow-billed Cuckoo,	Crow,
Kingfisher,	Cowbird,
Red-headed Woodpecker,	Red-winged Blackbird,
Flicker,	Meadow Lark,
Night Hawk,	Orchard Oriole,
Chimney Swift,	Baltimore Oriole,
Hummingbird,	Purple Grackle,
Kingbird,	Goldfinch,

Vesper Sparrow,	Red-eyed Vireo,
Grasshopper Sparrow,	Warbling Vireo,
Chipping Sparrow,	Yellow Warbler,
Field Sparrow,	Maryland Yellow-throat,
Song Sparrow,	Yellow-breasted Chat,
Cardinal,	Catbird,
Indigobird,	Brown Thrasher,
Purple Marten,	House Wren,
Cliff Swallow,	White-breasted Nuthatch,
Barn Swallow,	Tufted Titmouse,
Bank Swallow,	Robin,
Cedarbird,	Bluebird.

II. Additional species in the wooded slopes of the mountains—

Woodcock,	Towhee,
Ruffed Grouse,	White-eyed Vireo,
Sharp-shinned Hawk,	Black and White Warbler,
Red-tailed Hawk,	Chestnut-sided Warbler,
Hairy Woodpecker,	Blackburnian Warbler,
Downy Woodpecker,	Hooded Warbler,
Whip-poor-will,	Pine Warbler,
Least Flycatcher,	Ovenbird,
Blue Jay,	Black-capped Chickadee,
Scarlet Tanager,	Wood Thrush.

III. Additional species seen about Big Cove Tannery—

Red-bellied Woodpecker,	Louisiana Water Thrush,
Yellow-throated Vireo,	Bewick's Wren.*

* In Ridgway's *Birds of North and Middle America*, III, p. 554, Susquehanna County, Pa., is given as within the range of this bird. This is not one of the "southern and western" counties as stated, but in the extreme northeastern part of the state and largely boreal in its fauna. The record of Bewick's Wren from this county is obviously erroneous and is probably to be explained as follows: Mr. Ridgway based his statement on the localities given by Mr. Oberholser in his monograph of this genus (*Proc. U. S. N. M.*, 1898), which were not accompanied by the names of the respective counties. One of the specimens in the Carnegie Museum collection was cited as from "Springville, Pa." Mr. W. E. C. Todd kindly informs me that this locality is in Bedford Co., while the only "Springville, Pa.," in the gazetteers is in Susquehanna Co. [See beyond, p. 66, for additional data.]

Summer Birds of Milford, Pike County, Pa.

BY E. SEYMOUR WOODRUFF

THE following list is made up from my notes of a number of excursions—mostly short ones—taken between the dates of July 8 and September 9, 1905, inclusive, while I was at the summer camp of the Yale Forest School, near Milford, Pike county, Pennsylvania. The list is not as complete as it might have been had I had more time at my disposal, for there were several localities in the near neighborhood where a more exhaustive search than I was able to make would probably have yielded up more species of birds.

Milford lies on the west bank of the Delaware river, eight miles southwest of the point at which meet the boundaries of the three states of New York, New Jersey and Pennsylvania and has an altitude of about 500 feet above sea level. The valley of the Delaware on the Pennsylvania side of the river is a sand and gravel flood-plain averaging about a half-mile in width. To the west of this the land rises suddenly, in some places precipitously, reaching an altitude of from 1,000 to 1,200 feet, and is deeply dissected by numerous valleys containing beautiful little streams, often rushing and tumbling in a series of cascades and falls through deep and narrow ravines till they reach the valley of the Delaware below. The largest of these is the Sawkill.

In spite of these numerous valleys, the general impression one gets from a view from any high point is that it is a comparatively level country, for the tops of all the hills are at about the same height, none breaking the level line of the horizon.

The soil is nothing but more or less (mostly less) disintegrated shale, so dry and infertile in spite of numerous springs as to be almost worthless for agricultural purposes, the only product that can be raised with any fair profit being buckwheat. The result is that the country is still thickly wooded with very

few clearings outside of the Delaware Valley, while many of the roads are hardly more than back trails.

The forests are made up of mixed pitch-pine, white-pine, oak and other hard-woods—the pitch-pine being especially common—with a dense undergrowth of huckleberry and scrub oaks (*Quercus nana* and *Q. prinoides*) wherever the woods have in past years been opened up by the axe or by forest fires. In some sections of considerable extent the scrub oaks grow so densely as to make any progress through them not only extremely difficult, but often practically impossible. Hemlock is not very common, but is found along the sides of many of the ravines, often accompanied by a dense growth of wild rhododendron.

Five and seven miles to the west of Milford are two ponds known respectively as Sawkill Pond, the source of the stream of that name, and Big Brink, which are especially interesting because of the presence, in their immediate vicinity, of two sphagnum swamps containing a more or less dense growth of larch and black spruce. Another but much smaller spruce swamp, known as Gregory Swamp, lies about four and one-half miles to the northwest of Milford.

The most interesting fact with respect to the birds found as summer residents, was the intermingling of such northern species as the Blue-headed Vireo and the Magnolia, Blackburnian, Black-throated Blue, Mourning and Canadian Warblers, with representatives of a more southern fauna, such as the Orchard Oriole and the Worm-eating and Hooded Warblers.

The following list is made up of only those birds which I saw or secured myself, and of whose identification there can be no question. I did not get to Milford till the breeding season was nearly over, and several of the species noted were not met with till after the middle or end of July; but with the exception of the Myrtle, Bay-breasted, Black-poll and Wilson's Warblers and Olive-sided Fly-catcher, and possibly the Purple Finch and Bobolink, they are all undoubtedly birds that passed the breeding season in that region.

Perhaps the most noteworthy record in the list is the early date (August 20th) for the arrival of the Myrtle Warbler. To

the best of my knowledge this is the earliest fall record for this bird in Pennsylvania.

1. *Butorides virescens*, Green Heron. Two or three seen along the Sawkill and Delaware river.

2. *Actitis macularia*, Spotted Sandpiper. Sawkill and Delaware river and Sawkill Pond. Not common.

3. *Bonasa umbellus*, Ruffed Grouse. Fairly common.

4. *Zenaidura macroura*, Mourning Dove. Common. Always to be found in the neighborhood of buckwheat fields.

5. *Cathartes aura*, Turkey Vulture. A bird unquestionably a vulture, and probably this species flew over the camp July 8 and July 22.

6. *Accipiter velox*, Sharp-shinned Hawk. One seen near Sawkill Pond July 15.

7. *Accipiter cooperi*, Cooper's Hawk. Only one seen, July 22.

8. *Buteo lineatus*, Red-shouldered Hawk. Not common.

9. *Buteo borealis*, Red-tailed Hawk. Not common. One pair near camp.

10. *Buteo platypterus*, Broad-winged Hawk. Not common. A brood was raised close to the camp.

11. *Haliaetus leucoccephalus*, Bald Eagle. One seen over the Delaware August 23.

12. *Coccyzus erythrophthalmus*, Black-billed Cuckoo. Not common.

13. *Ceryle alcyon*, Belted Kingfisher. Two or three pair along the Sawkill.

14. *Dryobates villosus*, Hairy Woodpecker. Fairly common.

15. *Dryobates pubescens medianus*, Northern Downy Woodpecker. About the same as preceding species; perhaps a little more common.

16. *Colaptes auratus luteus*, Northern Flicker. Not common.

17. *Antrostomus vociferus*, Whip-poor-will. Common.

18. *Chordeiles virginianus*, Nighthawk. Common. A marvelous flight of these birds passed over the camp between the hours of 3:30 and 6:30 on the afternoon of August 30 coming up from the Delaware Valley flying due west.

19. *Chætura pelagica*, Chimney Swift. Common.

20. *Trochilus colubris*, Ruby-throated Hummingbird. Common.

21. *Tyrannus tyrannus*, Kingbird. Not common.
22. *Myiarchus crinitus*, Crested Flycatcher. Very common. The most abundant of all the Flycatchers.
23. *Sayornis phoebe*, Phoebe. Not common.
24. *Nuttallornis borealis*, Olive-sided Flycatcher. Rare migrant. One seen September 5.
25. *Contopus virens*, Wood Pewee. Common.
26. *Empidonax traillii alnorum*, Alder Flycatcher. Rare. Two or three seen July 16 in alders along the shore of Sawkill Pond.
27. *Empidonax minimus*, Least Flycatcher. Not common. Occasionally seen about orchards.
28. *Cyanocitta cristata*, Blue Jay. Fairly common.
29. *Corvus brachyrhynchos*, American Crow. Fairly common.
30. *Dolichonyx oryzivorus*, Bobolink. A small flock seen August 23 in the Delaware Valley. Only ones seen throughout the season.
31. *Agelaius phoeniceus*, Red-winged Blackbird. Not common. Seen only at Sawkill Pond and along the Delaware.
32. *Icterus spurius*, Orchard Oriole. Rare. One seen July 16th.
33. *Icterus galbula*, Baltimore Oriole. Uncommon.
34. *Quiscalus quiscula*, Purple Grackle. Not common. One flock of twelve birds seen July 21 in Milford.
35. *Carpodacus purpureus*, Purple Finch. Uncommon migrant. Several seen on Sawkill pike August 13 and September 9.
36. *Astragalinus tristis*, American Goldfinch. Fairly common.
37. *Poecetes gramineus*, Vesper Sparrow. Fairly common.
38. *Coturniculus savannarum passerinus*, Grasshopper Sparrow. Common in the Delaware Valley. Occasional in large clearings elsewhere.
39. *Ammodramus henslowii*, Henslow's Sparrow. Rare. One heard and seen in Delaware Valley July 22.
40. *Spizella socialis*, Chipping Sparrow. Common, especially in burnt-over pitch pine forests containing a thick undergrowth of huckleberry bushes.
41. *Spizella pusilla*, Field Sparrow. The most abundant of all the birds.

42. *Melospiza cinerea melodia*, Song Sparrow. Common in Delaware Valley and about the village of Milford, but rarely seen elsewhere.

43. *Melospiza georgiana*, Swamp Sparrow. Rare. A small colony about Sawkill Pond.

44. *Pipilo erythrophthalmus*, Towhee. Most abundant, especially in scrub oak lands.

45. *Cyanospiza cyanea*, Indigo Bunting. Common.

46. *Piranga erythromelas*, Scarlet Tanager. Common.

47. *Petrochelidon lunifrons*, Cliff Swallow. Common. The commonest of all the Swallows.

48. *Hirundo erythrogastra*, Barn Swallow. Common.

49. *Iridoprocne bicolor*, Tree Swallow. Common about Sawkill Pond.

50. *Riparia riparia*, Bank Swallow. Not common. A few about Sawkill Pond.

51. *Ampelis cedrorum*, Cedar Waxwing. Common.

52. *Vireo olivaceus*, Red-eyed Vireo. Very common.

53. *Vireo flavifrons*, Yellow-throated Vireo. Rare. One seen August 20 in the spruce swamp at Sawkill Pond.

54. *Vireo solitarius*, Blue-headed Vireo. Quite common.

55. *Mniotilta varia*, Black-and-White Warbler. The most abundant of all the Warblers.

56. *Helminthus vermivorus*, Worm-eating Warbler. Rare. Only four specimens seen. One July 28, two July 29 and one August 13.

57. *Helminthophila chrysoptera*, Golden-winged Warbler. Fairly common, especially in scrub-oak lands. None seen after August 13th.

58. *Helminthophila rubricapilla*, Nashville Warbler. Rare. July 21, 23, August 13, 20 and September 3.

59. *Compsothlypis americana usneæ*, Parula Warbler. Rare. July 9, 16, 30 and August 20.

60. *Dendroica caerulescens*, Black-throated Blue Warbler. Not common.

61. *Dendroica coronata*, Myrtle Warbler. Migrant. Two seen August 20, one of which, an adult male I secured and another September 5. None others seen.

62. *Dendroica maculosa*, Magnolia Warbler. Summer resident, but not common. Very common as a migrant after September 1.

63. *Dendroica pennsylvanica*, Chestnut-sided Warbler. Common.

64. *Dendroica castanea*, Bay-breasted Warbler. Migrant. One August 21 and three September 3.

65. *Dendroica striata*, Black-poll Warbler. Migrant. Several seen September 3.

66. *Dendroica blackburniæ*, Blackburnian Warbler. Fairly common in pitch-pine woods.

67. *Dendroica virens*, Black-throated Green Warbler. A scarce summer resident, but abundant as a migrant after August 26.

68. *Dendroica vigorsii*, Pine Warbler. Common in burnt-over pitch-pine forests.

69. *Seiurus aurocapillus*, Ovenbird. Most abundant

70. *Seiurus motacilla*, Louisiana Water Thrush. Not common, but every little stream had its pair.

71. *Geothlypis philadelphia*, Mourning Warbler. Very rare. One seen July 8 and another July 14, both females. The latter spent at least five minutes within ten or fifteen feet of me—too close to shoot, but so close that there could be no question as to its identity.

72. *Geothlypis trichas brachidactyla*, Northern Yellow-throat. Common.

73. *Wilsonia mitrata*, Hooded Warbler. Very rare. An adult male August 3 and a female August 13 in a spruce swamp near Big Brink Pond.

74. *Wilsonia pusilla*, Wilson's Warbler. Migrant. One adult male September 5; only one seen.

75. *Wilsonia canadensis*, Canadian Warbler. Not common, but always to be found in suitable localities.

76. *Setophaga ruticilla*, American Redstart. Common.

77. *Galeoscoptes carolinensis*, Catbird. Common.

78. *Toxostoma rufum*, Brown Thrasher. Common.

79. *Troglodytes ædon*, House Wren. Common about every orchard and farm.

80. *Sitta carolinensis*, White-breasted Nuthatch, well distributed but not common.

81. *Parus atricapillus*, Chickadee. Common.

82. *Hylocichla mustelina*, Wood Thrush. Not common, though often heard singing near the camp early in July.

83. *Hylocichla fuscescens*, Wilson's Thrush. Rare. Very few suitable places for them. Found only in Gregory Swamp and about Sawkill Pond.

84. *Merula migratoria*, American Robin. Fairly common, but not nearly so common as in less wooded localities.

85. *Sialia sialis*, Bluebird. Common.

Report on the Spring Migration of 1905

COMPILED BY WITMER STONE

THROUGH the activity of Mr. Samuel C. Palmer, chairman of the Club's Migration Committee,* thirteen additional migration reports were secured for the spring of 1905, while there were but seven of last year's corps who failed to respond. The 1905 list of sixty observers follows :

New Jersey.

Cape May, H. Walker Hand.
Downtown (near Newfield), W. W. Fair.
Yardville, Rachel E. Allinson.
Trenton, Laura E. Woodward.
Trenton, halfway to Bordentown, C. C. and R. M. Abbott.
Bordentown, William McFarland.
Summit, LaRue K. Holmes.
Beverly, J. Fletcher Street.
Burlington, Helen F. Carter.
Moorestown, Anna A. Mickle.
Moorestown, Wm. B. Evans and others.
Rancocas, Emily Haines.
Haddonfield, Mrs. E. M. Hamlin.
Haddonfield, H. E. Doughty.

Pennsylvania.

Kennett Square, Charles J. Pennock.
Concordville, Mrs. K. R. Styer.
Concordville, Joseph H. Willits.
Lenape, C. Carter and C. S. Carter.
Westtown, Edith Smedley, Susanna Smedley, etc.
West Chester, W. E. Roberts.
West Chester, Thomas H. Jackson.

* All requests, or blank schedules, etc., should be addressed to Mr. S. C. Palmer, Swarthmore, Delaware Co., Pa.

Knowlton, Bruce P. Tyler.
Swarthmore, Samuel C. Palmer.
Swarthmore, George S. Roberts.
Lansdowne, John D. Carter.
Lansdowne, Louisa M. Jacob.
Lansdowne, Aldrich J. Pennock.
Lansdowne, Anna D. White.
Lansdowne, Friends' School.
Lansdowne, W. R. White.
Collingdale, Paul L. Lorrilliere.
Secane, Edwin L. Palmer.
Media, Lydia G. Allen.
Media, Philip H. Moore.
Media, Alice Fussell.
Media, Ellen Fussell.
Overbrook, C. J. Hunt.
Overbrook, Elmer Onderdonk.
West Philadelphia, J. H. Steele.
Ardmore, Wm. L. Baily.
Haverford, W. J. Serrill.
Haverford, H. Albert Linton.
Radnor, Chas. H. Rogers.
Bryn Mawr, Miss Emily H. Thomas.
Germantown, Stewardson Brown.
Germantown, Arthur F. Hager.
Germantown, Paul C. Brewer.
Wissahickon, John R. Pickering.
Hunting Park, Alexander Patman.
Olney, George S. Morris.
Oak Lane, Richard C. Harlow.
Frankford, Richard F. Miller.
Bristol, Thomas D. Keim.
Woodbourne, Edward Pickering, Jr.
George School, Students.
Perkasie, Albert C. Rutter.
Marietta, W. H. Buller.
Columbia, J. Jay Wisler.
Williamsport, August Koch.

Lopez, Otto Behr.

The records of arrival of all the species at the stations within ten miles of Philadelphia will be found in the accompanying tables, while the large schedule contains the arrivals of the more common species at the remaining stations. I am much indebted to Mr. Paul L. Lorrilliere for aid in compiling these data.

The method explained on page 48 of *Cassinia* for 1904, seems to furnish the most accurate record of the arrival of a species in a given district, that can be obtained from a combination of field observations. Instead of expecting our records to show a uniform date of arrival at all stations within a radius of say ten miles, it seems more likely that a correct statement of the progress of migration of a species will be that individuals arrived at certain stations on such and such dates and that the bulk movement occurred on a later date indicated by the simultaneous arrival at a large number of stations. Sometimes this bulk movement is not so well marked, which would seem to indicate a continuous migration of the species covering a greater period. A few examples from the 1905 records will serve to illustrate these remarks.

Chimney Swift.

April 13. Frankford.
 April 18. Bryn Mawr and
 Lansdowne.
 April 19. Bordentown.
 April 20. Nine stations.
 April 21. Eighteen stations.

Ovenbird.

April 25. West Philadelphia,
 Concordville.
 April 26. Kennett.
 April 27. Swarthmore, West-
 town.
 April 28. Haverford.
 April 29. Nine stations.
 April 30. Twelve stations.

Scarlet Tanager.

April 21. Collingdale.
 May 2. Media.
 May 3. Lansdowne, Olney,
 Westtown, Knowlton.
 May 5. Four stations.
 May 6. Six stations.
 May 7. Seven stations.

Wood Thrush.

April 23. Germantown.
 April 24. Oak Lane.
 April 25. Media, Haverford.
 April 26. Frankford.
 April 27. Olney, Bordentown.
 April 28. Six stations.
 April 29. One station.
 April 30. Eight stations.

NAME.	Moorestown, N. J. N. 1; E. 12.1	Madisonfield, N. J. S. 4; E. 7.	Media, Pa. S. 2; W. 12.	Swarthmore, Pa. S. 3; W. 10.	Secane, Pa. S. 3; W. 8.	Collingsdale, Pa. S. 3; W. 6.	Lansdowne, Pa. S. 1; W. 6.	Overbrook, Phila. N. 2; W. 4.	Ardmore, Pa. N. 3; W. 7.	Haverford, Pa. N. 4; W. 8.	Bryn Mawr, Pa. N. 4; W. 9.	Radnor, Pa. N. 6; W. 11.	Germanstown, Phila. N. 6; W. 1.	Hunting Park, Phila. N. 5; E. 1.	Oak Lane, Phila. N. 7; E. 2.	Olney, Phila. N. 6; E. 3.	Frankford, Phila. N. 5; E. 5.
Canada Goose	Mar. 24	Mar. 15	Mar. 18	Mar. 15	.....	.....	.....	.....	Mar. 12	.....	.....	.....	.....	.....	Mar. 18	.....	Mar. 16
Green Heron	Apr. 10	.....	Apr. 13	May 7	.....	.....	May 12	Apr. 23	May 14	Apr. 28	.....	May 4	.....	.....	Apr. 15	May 2	May 15
Night Heron	Apr. 23	.....	May 26	May 22	.....	May 10	May 10	Apr. 26	Apr. 29	Apr. 29	.....	Apr. 11	.....	.....	Apr. 22	Apr. 6	Apr. 20
Spotted Sandpiper	May 1	Apr. 20	Apr. 15	Apr. 22	.....	.....	Apr. 11	Apr. 23	May 7	Apr. 29	.....	May 4	.....	.....	Apr. 27	Apr. 20	Apr. 21
Solitary Sandpiper	Apr. 28	May 7	May 16	May 3	.....	.....	.....	.....	May 4	May 4	.....	May 4	.....	.....	Apr. 30	Apr. 25	May 4
Killdeer	Feb. 25	Mar. 26	Mar. 19	May 5	.....	.....	.....	.....	May 14	May 14	.....	May 4	.....	.....	Mar. 12	.....	May 4
Dove	Apr. 10	Mar. 25	Mar. 29	Apr. 2	Mar. 26	Apr. 9	.....	.....	Mar. 19	Mar. 19	May 6	Apr. 9	.....	.....	Mar. 25	Mar. 15	Apr. 11
Osprey	Apr. 10	Apr. 5	May 6	Apr. 20	.....	.....	.....	.....	Apr. 15	Apr. 15	.....	May 4	.....	.....	Apr. 8	.....	.....
Turkey Vulture	Feb. 19	Mar. 26	Mar. 11	Mar. 5	May 12	Apr. 21	Mar. 27	Mar. 5	Apr. 1	Mar. 25	.....	Feb. 11	.....	Apr. 29	Mar. 16	.....	May 11
Yellow-billed Cuckoo	May 5	May 27	May 6	May 26	.....	May 5	May 7	May 14	May 14	May 8	May 26	May 14	.....	.....	Apr. 30	May 6	May 11
Black-billed Cuckoo	May 12	May 8	May 4	May 7	May 28	.....	.....	.....	May 14	May 10	.....	Jun. 11	.....	.....	May 7	.....	May 22
Kingfisher	Apr. 10	Apr. 2	Mar. 11	Mar. 10	May 12	Apr. 9	Mar. 23	.....	May 21	Apr. 15	.....	Apr. 1	Apr. 9	Apr. 1	Mar. 11	Apr. 3	Mar. 24
Yellow-bellied Sapskr.	.....	Apr. 18	Apr. 8	.....	.....	.....	.....	Apr. 29	.....	Apr. 28	Apr. 11	Feb. 17	Apr. 6	.....	Apr. 1	Apr. 20	Apr. 25
Red-headed Woodpeckr.	.....	May 7	May 19	May 9	May 21	.....	May 9	.....	May 21	Apr. 30	.....	May 3	.....	Apr. 1	Apr. 1	.....	Apr. 25
Flicker	Mar. 19	Mar. 12	Mar. 19	Mar. 10	Mar. 19	Mar. 9	Mar. 19	Mar. 19	Mar. 19	Res.	Mar. 7	Feb. 25	Mar. 19	Mar. 18	Jan. 21	Res.	Feb. 22
Whip-poor-will	Apr. 30	May 14	May 16	.....	.....	.....	May 1	.....	May 1	.....	.....	.....	.....	.....	May 5	.....	May 1
Nighthawk	.....	May 15	May 6	.....	.....	.....	May 15	May 15	.....	May 19	.....	.....	.....	.....	May 7	Apr. 28	.....
Chimney Swift	Apr. 21	Apr. 23	Apr. 20	Apr. 20	Apr. 30	Apr. 21	Apr. 20	Apr. 20	Apr. 21	Apr. 24	Apr. 18	Apr. 24	Apr. 20	Apr. 22	Apr. 20	Apr. 22	Apr. 13
Hummingbird	Apr. 30	May 10	May 7	May 7	.....	May 7	May 7	.....	May 21	May 11	Apr. 28	May 10	May 7	May 13	May 6	.....	May 22
Kingbird	May 8	May 8	Apr. 29	May 3	May 2	.....	May 4	May 12	May 7	May 1	.....	May 4	May 14	May 20	May 3	.....	May 3
Crested Flycatcher	May 1	May 7	Apr. 30	May 2	May 3	May 5	May 4	May 12	May 7	May 3	May 6	May 3	May 8	.....	Apr. 30	Apr. 28	May 3
Phoebe	Mar. 26	Mar. 26	Mar. 16	Mar. 22	Mar. 26	Mr. 18 ²	Mar. 22	Mar. 19	Mar. 26	Mar. 19	Mar. 16	Mar. 22	Mar. 26	Mar. 18	Mar. 19	Mar. 29	Mar. 27

¹ The relative positions of the stations are indicated by the number of miles, N. or S. and E. or W., that each one is distant from Philadelphia—
 i. e., its latitude and longitude with reference to the City Hall. ² Tinticum, Delaware County, Pa.

NAME.	Moorestown, N. J.	Haddonfield, N. J.	Media, Pa.	Swarthmore, Pa.	Secane, Pa.	Collingsdale, Pa.	Lansdowne, Pa.	Overbrook, Phila.	Ardmore, Pa.	Haverford, Pa.	Bryn Mawr, Pa.	Radnor, Pa.	Germanstown, Phila.	Hunting Park, Phila.	Oak Lane, Phila.	Olney, Phila.	Frankford, Phila.
Wood Pewee	May 12	May 9	May 7	May 5	May 10	May 13	May 9	May 12	May 12	May 8	May 12	May 12	May 12	May 11	May 6	May 3	May 13
Acadian Flycatcher	May 7	May 7	May 7	May 5	May 10	May 13	May 4	May 3	May 21	May 11	May 12	May 14	May 14	May 11	May 6	May 3	May 13
Least Flycatcher	May 6	May 6	Apr. 30	May 11	May 10	May 13	May 1	May 3	May 21	May 11	May 12	May 14	May 14	May 21	May 6	May 3	May 13
Bobolink	May 10	May 6	May 6	May 11	May 10	May 13	May 12	May 14	May 8	May 8	May 12	May 8	May 8	May 5	May 21	May 10	May 10
Cowbird	Mar. 23	Mar. 16	Mar. 27	Mar. 27	Mar. 9	Mar. 18	Mar. 17	Mar. 30	Apr. 9	Apr. 9	Apr. 10	Apr. 10	Apr. 24	Mar. 21	Mar. 24	Apr. 14	Mar. 28
Red-winged Blackbird	Mar. 12	Mar. 11	Mar. 16	Mar. 12	Mar. 9	Mar. 18	Mar. 11	Mar. 19	Mar. 19	Mar. 19	Mar. 16	Mar. 16	Mar. 16	Mar. 25	Mar. 11	Mar. 30	Mar. 11
Meadow Lark	Res.	Mar. 6	Feb. 4	.....	Mar. 16	Mar. 18	May 7	May 21	May 3	May 5	May 5	May 5	May 5	.....	Jan. 6	Res.	Mar. 14
Orchard Oriole	Apr. 30	May 1	Apr. 30	.....	May 12	May 17	May 7	May 7	May 3	May 3	May 12	May 2	May 2	.....	May 6	.....	May 3
Baltimore Oriole	May 11	May 7	May 2	May 7	May 12	May 17	May 7	.....	May 3	May 3	May 12	May 2	May 3	.....	May 1	.....	May 4
Rusty Blackbird	Mar. 26	Mar. 25	.....	.....	.....	.....	Mar. 19	.....	Apr. 16	.....	.....	.....	May 12	Mar. 18	Apr. 14	.....	May 4
Purple Grackle	Feb. 27	Mar. 11	Mar. 8	Mar. 8	Mar. 11	Feb. 24	Mar. 8	Mar. 10	Mar. 9	Mar. 10	Mar. 7	Mar. 10	Mar. 11	Mar. 11	Mar. 8	Mar. 8	Mar. 11
Vesper Sparrow	Apr. 9	Mar. 26	Mar. 19	.....	.....	Apr. 16	.....	.....	Mar. 19	Mar. 25	.....	Mar. 26	Mar. 26	.....	Apr. 1	Apr. 15	Mar. 31
Savanna Sparrow	May 5	May 5	Apr. 16	.....	.....	.....	.....	.....	Mar. 19	.....	.....	Apr. 1	.....	.....	Mar. 15	Mar. 27	.....
Grasshopper Sparrow	May 5	May 21	May 6	.....	Apr. 24	.....	.....	May 6	May 14	Apr. 27	.....	Apr. 28	.....	Apr. 22	Apr. 30	Apr. 22	.....
Chipping Sparrow	Mar. 25	Mar. 21	Mar. 26	Mar. 27	Apr. 24	Mar. 18	Mar. 28	Mar. 27	Mar. 29	Mar. 18	Apr. 1	Mar. 26	Mar. 28	Apr. 11	Mar. 29	Apr. 2	Apr. 11
Field Sparrow	Mar. 26	Mar. 23	Mar. 18	Mar. 19	Mar. 26	Mar. 19	Mar. 19	Mar. 27	Apr. 1	Mar. 19	Apr. 1	Res.	Mar. 26	Mar. 29	Feb. 25	Apr. 10	Mar. 7
Swamp Sparrow	Apr. 14	Apr. 30	Mar. 31	Mar. 22	.....	.....	Apr. 24	.....	May 14	Apr. 26	.....	Mar. 16	Mar. 16	.....	Apr. 12	Apr. 12	Apr. 25
Fox Sparrow	Mar. 19	Mar. 18	Mar. 16	Mar. 16	Apr. 16	.....	Apr. 12	Mar. 12	Apr. 19	Mar. 19	Apr. 23	Mar. 17	Mar. 16	.....	Mar. 16	Mar. 20	Mar. 16
Chewink	Apr. 23	Apr. 30	Apr. 11	Apr. 20	May 14	Apr. 30	Apr. 12	Apr. 21	Apr. 23	Apr. 14	Apr. 23	Apr. 11	Apr. 22	.....	Apr. 12	Apr. 25	Mar. 24
Rose-breasted Grosbeak	May 8	May 7	May 7	.....	.....	.....	May 7	.....	May 7	May 8	May 13	May 7	.....	.....	May 7	.....	.....
Indigobird	May 12	May 10	May 6	May 8	May 14	May 21	May 2	May 8	May 7	May 5	May 5	May 5	May 9	.....	May 6	May 2	May 10
Scarlet Tanager	May 5	May 7	May 2	May 6	May 10	Apr. 21	May 3	May 8	May 7	May 4	May 6	May 5	May 7	May 6	May 6	May 3	May 5
Purple Martin	Apr. 11	Mar. 26	Apr. 16	.....	.....	.....	.....	.....	.....	.....	Apr. 30 ³	.....	.....	.....	Apr. 1	.....	May 10

¹ Paoli, Pa.² Next seen April 13.³ Tinicum, Del. Co. Pa.

NAME.	Moorestown, N. J.	Haddonfield, N. J.	Media, Pa.	Swarthmore, Pa.	Secane, Pa.	Collingsdale, Pa.	Lansdowne, Pa.	Overbrook, Phila.	Ardmore, Pa.	Haverford, Pa.	Bryn Mawr, Pa.	Radnor, Pa.	Germanstown, Phila.	Hunting Park, Phila.	Oak Lane, Phila.	Olney, Pa.	Frankford, Phila.
Cliff Swallow	Apr. 23	Apr. 20	May 16	Apr. 27	Apr. 29	Apr. 21	Apr. 29	.....	May 7	Apr. 25	.....	Apr. 24	.....	May 6	Apr. 20	Apr. 25	May 1
Barn Swallow	Apr. 30	May 8	Apr. 21	.....	.....	.....	.....	.....	May 8	Apr. 30	.....	Apr. 21	.....	.....	Apr. 22	Apr. 25	Apr. 20
Tree Swallow	.....	.....	Apr. 8	.....	.....	Apr. 30	.....	.....	.....	Apr. 30	.....	.....	.....	.....	May 12	.....	May 17
Bank Swallow	.....	.....	Apr. 24	Apr. 13	.....	.....	.....	.....	May 3	May 8	.....	May 4	Apr. 22	.....	Apr. 21	Mar. 20	Apr. 27
Rough-winged Swallow	Mar. 5	May 9	Mar. 29	Apr. 28	.....	May 17	May 17	.....	May 25	Mar. 18	.....	Mar. 17	May 7	.....	May 22	Apr. 18	Apr. 13
Cedar Bird	May 5	May 7	May 3	May 6	May 4	May 4	May 2	May 12	May 7	Apr. 30	May 6	May 4	May 7	May 13	May 4	May 1	Apr. 20
Red-eyed Vireo	May 10	May 7	May 7	.....	.....	May 12	May 12	.....	May 12	Apr. 30	.....	May 2	May 3	.....	May 6	May 1	May 8
Warbling Vireo	May 10	May 7	May 7	.....	.....	May 7	May 1	.....	May 7	May 7	.....	May 4	May 10	.....	May 6	May 10	May 10
Yellow-throated Vireo	May 1	May 7	Apr. 30	May 6	.....	May 7	May 1	.....	May 7	May 7	.....	May 4	May 10	.....	May 6	Apr. 30	May 10
Solitary Vireo	.....	.....	.....	.....	.....	Apr. 14	.....	.....	.....	May 6	.....	.....	.....	.....	Apr. 25	Apr. 25	May 10
White-eyed Vireo	Apr. 30	May 8	Apr. 28	May 3	.....	May 5	May 7	May 12	May 7	May 2	.....	May 4	.....	.....	May 21	.....	May 20
Black and White W'bler	Apr. 24	Apr. 27	Apr. 21	Apr. 30	.....	Apr. 21	Apr. 29	Apr. 24	Apr. 30	Apr. 25	May 6	May 1	Apr. 23	.....	Apr. 13	.....	May 2
Worm-eating Warbler	.....	.....	May 7	.....	.....	.....	.....	.....	May 14	Apr. 30	.....	May 3	.....	.....	May 6	.....	May 10
Blue-winged Warbler	.....	May 5	May 1	May 3	.....	.....	May 3	May 6	May 7	May 4	.....	May 4	.....	.....	May 5	.....	May 9
Parula Warbler	May 7	.....	Apr. 30	May 11	.....	.....	May 3	May 6	May 4	May 3	May 6	Apr. 29	May 8	.....	Apr. 30	Apr. 30	May 9
Yellow Warbler	Apr. 27	May 1	Apr. 25	Apr. 30	Apr. 16	Apr. 30	May 1	.....	.....	May 1	.....	May 3	May 11	.....	May 2	Apr. 30	Apr. 27
Black-thr'd Blue W'br.	May 8	May 7	May 6	May 1	.....	Apr. 30	May 2	May 7	Apr. 30	May 4	May 6	May 6	Apr. 30	.....	May 6	Apr. 29	May 12
Myrtle Warbler	May 5	Apr. 25	Apr. 21	Apr. 16	Apr. 23	May 7	May 1	May 3	Apr. 21	Apr. 24	Apr. 18	Apr. 14	Apr. 22	Apr. 1	Apr. 10	Apr. 27	Apr. 27
Magnolia Warbler	May 7	May 15	May 1	May 7	.....	May 21	May 7	May 15	May 7	May 4	May 6	May 10	May 7	.....	May 13	Apr. 29	May 10
Chestnut-sided Warbler	May 8	May 10	May 4	May 2	.....	.....	May 4	May 12	May 7	May 4	May 12	May 7	May 10	.....	May 8	May 2	May 10
Black-poll Warbler	May 11	May 7	May 7	.....	.....	May 18	May 7	.....	May 7	May 8	May 6	May 7	May 12	.....	May 7	May 14	May 18
Blackburnian Warbler	May 12	.....	May 8	.....	.....	May 11	May 7	May 11	May 12	May 10	May 6	May 8	May 11	.....	.....	May 3	May 10
Black-thr'd Green W'br	Apr. 30	May 7	Apr. 28	.....	.....	.....	Apr. 26	May 11	May 7	May 1	May 9	May 7	May 7	.....	May 6	Apr. 30	May 11

NAME.	Moorestown, N. J.	Haddonfield, N. J.	Media, Pa.	Swarthmore, Pa.	Secane, Pa.	Collingsdale, Pa.	Lansdowne, Pa.	Overbrook, Phila.	Ardmore, Pa.	Haverford, Pa.	Bryn Mawr, Pa.	Radnor, Pa.	Germanstown, Phila.	Hunting Park, Phila.	Oak Lane, Phila.	Olney, Pa.	Frankford, Phila.
Pine Warbler	Apr. 14	.....	Apr. 13	Apr. 10	.....	Apr. 6	.....	Apr. 14	.....	Apr. 12	Apr. 11	.....	May 8	.....	Apr. 27	.....	.....
Yellow Palm Warbler .....	.....	.....	May 2	.....	.....	.....	.....	.....	.....	May 10	.....	.....	Apr. 9	.....	Apr. 18	Apr. 15	Apr. 13
Prairie Warbler	Apr. 30	May 5	Apr. 29	Apr. 27	.....	May 7	Apr. 29	Apr. 25	Apr. 30	Apr. 28	May 6	May 4	Apr. 29	.....	May 7	.....	May 16
Ovenbird .....	.....	May 1	Apr. 30	May 8	.....	Apr. 30	May 3	Apr. 29	May 7	May 4	.....	May 7	Apr. 27	.....	Apr. 29	Apr. 29	May 3
Water Thrush .....	.....	.....	Apr. 30	Apr. 30	.....	.....	May 3	May 8	May 7	May 2	.....	May 3	Apr. 27	May 6	May 2	May 1	May 4
Kentucky Warbler .....	.....	.....	Apr. 30	Apr. 30	.....	May 7	Apr. 23	May 2	May 7	Apr. 30	May 6	Apr. 26	Apr. 29	May 6	Apr. 24	Apr. 28	May 1
Maryland Yellow-throat	Apr. 23	Apr. 30	Apr. 25	Apr. 30	May 7	Apr. 21	Apr. 23	May 2	May 7	Apr. 30	May 6	May 3	May 10	May 6	May 5	May 2	May 10
Chat	May 7	May 10	Apr. 30	Apr. 24	May 7	Apr. 30	May 3	May 12	May 7	May 6	May 12	May 6	May 11	May 6	May 5	May 4	May 13
Canada Warbler	May 12	May 15	May 7	May 7	.....	.....	May 2	May 12	May 7	May 8	May 12	May 13	May 11	.....	May 10	May 4	May 13
Redstart	May 7	May 5	Apr. 29	May 2	.....	May 7	Apr. 30	Apr. 30	Apr. 30	Apr. 30	May 6	May 3	May 7	.....	Apr. 29	Apr. 29	May 13
Catbird	Apr. 23	Apr. 30	Apr. 24	May 1	May 7	May 7	Apr. 25	May 3	Apr. 30	Apr. 29	Apr. 28	May 2	Apr. 30	Apr. 29	Apr. 15	Apr. 29	Apr. 28
Brown Thrasher	Apr. 22	Apr. 22	Apr. 14	Apr. 24	Apr. 9	Apr. 21	Apr. 22	Apr. 19	Apr. 18	Apr. 14	Apr. 18	Apr. 24	Apr. 22	Apr. 29	Apr. 22	Apr. 25	Apr. 23
House Wren	Apr. 22	Apr. 30	Apr. 22	Apr. 30	.....	.....	Apr. 24	Apr. 24	May 1	Apr. 25	Apr. 28	Apr. 28	Apr. 25	.....	Apr. 23	Apr. 23	Apr. 22
Long-bill'd Marsh Wren .....	.....	.....	.....	.....	.....	.....	Apr. 15	Apr. 14	Apr. 2	Apr. 25	Apr. 4	Apr. 3	Apr. 8	Apr. 29	May 12	Apr. 30	Apr. 30
Ruby-crowned Kinglet	Apr. 11	.....	Mar. 31	Apr. 16	.....	.....	Apr. 15	Apr. 14	Apr. 2	Apr. 25	Apr. 4	Apr. 3	Apr. 8	Apr. 29	Apr. 2	Apr. 25	May 9
Wood Thrush	May 1	Apr. 30	Apr. 25	Apr. 30	May 16	Apr. 28	Apr. 30	May 2	Apr. 30	Apr. 25	Apr. 28	Apr. 29	Apr. 23	.....	Apr. 24	Apr. 27	Apr. 26
Wilson's Thrush	May 8	Apr. 15	Apr. 30	May 1	May 21	Apr. 10	May 2	.....	May 7	Apr. 25	May 6	May 10	May 4	.....	Apr. 30	Apr. 29	May 2
Gray-backed Thrush .....	.....	.....	May 9	.....	May 28	May 9	May 9	.....	May 12	May 8	May 6	May 13	.....	May 15	May 15	May 10	May 11
Olive-checked Thrush	May 8	Apr. 30	May 7	.....	.....	.....	May 4	May 12	May 12	May 8	May 6	May 7	Apr. 19	.....	May 2	Apr. 30	May 11
Hermit Thrush	Apr. 10	Apr. 18	Mar. 26	Apr. 12	May 7	Mar. 31	Apr. 4	Apr. 14	Apr. 1	Mar. 28	Apr. 11	Apr. 1	Apr. 8	.....	Apr. 16	Apr. 9	Apr. 11
Robin	Mar. 6	Mar. 8	Mar. 10	Mar. 10	Mar. 10	Mar. 4	Mar. 12	Mar. 11	Mar. 11	Mar. 11	Mar. 7	Mar. 10	Mar. 12	Mar. 11	Feb. 26	Mar. 5	Mar. 8
Bluebird	Feb. 28	Mar. 6	Feb. 24	Mar. 9	Mar. 1	Mar. 1	Mar. 12	Mar. 11	Mar. 11	Mar. 4	Jan. 15	Mar. 14	Mar. 18	Feb. 25	Mar. 8	Mar. 8

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Flicker	Mar. 21	Mar. 19	Feb. 28	Mar. 19	Mar. 15	Feb. 26	Mar. 19	Mar. 19	Mar. 27	Mar. 18	Mar. 14	Mar. 9	Res.	Res.	Mar. 18	Mar. 25	Mar. 2	Mar. 26	Mar. 28	Mar. 31	Mar. 29
Whip-poor-will	Apr. 26	Apr. 12											Apr. 23	May 18	.....	Apr. 20	May 6	.....	Apr. 20	May 14	May 2		
Nighthawk	.....	May 10						May 28				Apr. 21	.....	Apr. 21	.....	May 11	.....	May 4	May 12	Apr. 13	May 27		
Chimney Swift	Apr. 23	Apr. 24	Apr. 21	Apr. 21	Apr. 21	Apr. 21	.....	Apr. 21	Apr. 21	Apr. 20	Apr. 21	Apr. 20	Apr. 23	Apr. 19	Apr. 23	Apr. 21	Apr. 21	Mar. 29	Apr. 21	Apr. 21	Apr. 20	Apr. 13	Apr. 30
Hummingbird	May 4	.....	May 7	.....	.....	May 6	May 18	May 7	May 10	May 8	May 10	May 7	May 9	May 6	May 6	May 12	.....	May 15	.....	May 7	May 7	.....	May 16
Kingbird	May 4	May 3	Apr. 30	May 24	Apr. 28	May 2	May 2	May 3	May 4	May 6	May 20	May 6	May 2	May 6	May 5	Apr. 30	Apr. 29	May 13	May 10	May 7	May 14	Apr. 30	May 4
Crested Flycatcher	May 7	May 3	Apr. 30	Apr. 26	May 3	May 3	May 3	May 3	May 2	May 6	May 9	May 6	May 2	May 2	May 4	May 3	May 3	.....	May 5	May 7	May 4		
Phoebe	.....	Mar. 23	Mar. 18	Mar. 18	Mar. 15	.....	Mar. 17	Mar. 17	Mar. 28	.....	Mar. 5	Mar. 19	Apr. 3	Mar. 23	Mar. 28	Mar. 27	Mar. 27	Mar. 18	Apr. 8	Mar. 22	Mar. 18	Mar. 28	Mar. 26
Bobolink	.....	.....	May 1	May 7	May 8	.....	May 2	.....	.....	.....	.....	.....	.....	.....	May 10	May 3	May 7	May 13	May 4	.....	.....	May 20	May 11
Cowbird	Res.	.....	Mar. 23	Mar. 19	Mar. 19	.....	Mar. 19	Mar. 19	.....	.....	.....	Apr. 9	.....	May 11	Res.	.....	Apr. 9	Apr. 1	May 4	Apr. 13	Mar. 18	Mar. 11	May 16
Red-winged Blackbird	Res.	Mar. 10	.....	Mar. 11	Mar. 11	Mar. 13	Mar. 11	Mar. 17	Mar. 19	.....	May 20	Mar. 9	Mar. 15	Apr. 10	Mar. 10	Mar. 15	Mar. 16	Mar. 29	Mar. 27	.....	Feb. 14	Mar. 22	Mar. 17
Baltimore Oriole	May 2	May 1	Apr. 29	May 10	May 6	May 5	May 3	May 7	May 8	May 8	Apr. 30	May 14	Apr. 30	May 11	May 3	May 11	May 3	May 1	May 4	Apr. 29	May 7	May 2	
Purple Grackle	Mar. 5	Mar. 4	Mar. 9	Mar. 8	Mar. 1	Mar. 10	Mar. 11	Mar. 7	Mar. 6	.....	Mar. 10	Mar. 9	Mar. 8	Mar. 10	Mar. 8	Mar. 11	Feb. 10	Mar. 11	Mar. 9	Mar. 12	Mar. 16	Mar. 20	Mar. 26
Chipping Sparrow	Mar. 9	Mar. 29	Mar. 27	Mar. 28	Mar. 25	.....	Mar. 27	Mar. 26	Mar. 28	.....	Apr. 5	Mar. 28	Apr. 6	Mar. 26	Mar. 31	Apr. 5	Mar. 5	Apr. 1	Apr. 9	Apr. 3	Apr. 2	Apr. 19	Apr. 10
Chewink	Apr. 9	Apr. 9	.....	Apr. 3	.....	Apr. 11	Apr. 24	Apr. 18	Apr. 22	Apr. 29	Apr. 28	Apr. 23	Apr. 20	May 2	Apr. 11	Apr. 23	Apr. 22	Apr. 21	Apr. 23	Apr. 23	Apr. 9	May 4	Apr. 27
Indigobird	.....	.....	May 9	May 25	.....	May 6	May 8	May 7	May 12	May 21	May 14	May 12	.....	May 14	May 5	May 13	May 7	.....	May 15	May 13	.....	May 20	May 14
Scarlet Tanager	.....	May 14	May 6	May 7	.....	May 3	May 10	May 3	May 13	May 9	May 8	May 14	.....	May 22	May 12	May 15	May 3	.....	May 12	.....	May 5	May 14	May 5
Purple Martin	Mar. 27	.....	Mar. 30	.....	Mar. 30	.....	Apr. 10	Apr. 23	.....	May 9	.....	.....	Apr. 11	May 14	Apr. 16	.....	Apr. 6	.....	May 12	.....	.....	.....	.....
Barn Swallow	Apr. 14	Apr. 30	Apr. 25	Apr. 22	Apr. 15	.....	Apr. 23	Apr. 30	Apr. 7	Apr. 30	Apr. 16	Apr. 23	Apr. 23	Apr. 18	Apr. 18	Apr. 15	Apr. 15	May 1	May 13	Apr. 16	Apr. 22	Apr. 24	
Red-eyed Vireo	.....	May 6	May 7	May 2	May 3	.....	May 3	May 5	May 3	May 2	May 7	May 6	May 1	May 19	May 9	.....	May 1	.....	May 7	May 7	May 4	Apr. 22	Apr. 28
Black and White Warbler	Apr. 29	May 2	May 7	May 2	Apr. 26	.....	Apr. 22	Apr. 30	Apr. 28	Apr. 28	Apr. 30	May 6	May 1	Apr. 27	.....	Apr. 9	Apr. 10	Apr. 23	May 7	May 7	May 2	May 14	
Chestnut-sided Warbler	.....	May 7	.....	.....	.....	May 8	.....	Apr. 28	.....	May 8	May 10	.....	May 12	.....	May 10	.....	May 10	.....	May 3	May 7	May 4	May 4	
Ovenbird	Apr. 29	Apr. 26	Apr. 25	.....	Apr. 27	May 1	Apr. 30	Apr. 30	Apr. 29	Apr. 30	May 3	May 4	Apr. 29	May 1	Apr. 26	Apr. 30	May 5	Apr. 30	May 2	May 4	May 4	May 4	
Maryland Yellow-throat	May 7	Apr. 30	May 2	Apr. 26	May 7	Apr. 23	May 4	Apr. 23	Apr. 30	Apr. 29	May 7	Apr. 30	Apr. 23	Apr. 25	Apr. 24	May 14	Apr. 22	.....	May 7	May 4	May 20	May 9	
Chat	May 8	May 7	May 8	May 4	May 3	Apr. 29	May 3	May 6	May 7	May 6	May 6	.....	May 4	May 6	May 4	May 15	Apr. 30	.....	May 12	May 7	May 7	May 4	
Catbird	Apr. 23	Apr. 30	Apr. 30	Apr. 29	Apr. 29	Apr. 28	May 3	Apr. 30	Apr. 30	Apr. 29	Apr. 30	Apr. 30	May 1	May 5	May 1	Apr. 29	Apr. 28	Apr. 30	Apr. 30	May 7	May 4	May 8	May 8
Brown Thrasher	May 8	Apr. 14	Apr. 26	Apr. 11	Apr. 11	Apr. 23	Apr. 19	Apr. 23	Apr. 22	Apr. 24	Apr. 28	Apr. 30	Apr. 21	Apr. 20	Apr. 11	Apr. 19	Apr. 22	Apr. 21	Apr. 17	Apr. 23	Apr. 22	May 3	Apr. 29
House Wren	Apr. 21	Apr. 30	Apr. 26	.....	Apr. 26	Apr. 26	Apr. 24	May 6	May 3	Apr. 28	May 12	.....	May 5	May 3	Apr. 24	May 2	May 1	.....	Apr. 30	Apr. 23	May 4	May 3	Apr. 28
Wood Thrush	.....	May 7	May 6	May 1	May 5	Apr. 28	May 6	Apr. 28	May 7	May 6	Apr. 30	Apr. 30	Apr. 27	May 8	May 3	May 8	Apr. 15	May 5	.....	Apr. 23	May 2	May 4	May 3
Hermit Thrush	.....	Apr. 2	Apr. 6	Apr. 9	Apr. 9	Apr. 14	.....	Apr. 22	.....	Apr. 16	Apr. 19	Apr. 9	.....	Apr. 30	Apr. 30	Mar. 18	Apr. 8	Apr. 27	Apr. 20	Apr. 9	Apr. 26	Apr. 12	
Robin	Mar. 5	Mar. 17	Mar. 5	Feb. 26	Mar. 7	Mar. 13	Mar. 10	Feb. 21	Mar. 8	Mar. 6	Feb. 28	Mar. 2	Mar. 3	Mar. 9	Res.	Mar. 12	Mar. 10	Mar. 16	Mar. 5	Mar. 9	Mar. 12	Mar. 10	Mar. 17
Bluebird	Mar. 1	Mar. 2	Res.	Mar. 5	Mar. 10	Mar. 5	Res.	Mar. 1	Mar. 6	.....	Mar. 6	Mar. 12	Res.	Feb. 25	Res.	Feb. 14	Mar. 10	Feb. 19	Mar. 2	Mar. 7	Res.	Mar. 10	Mar. 17

Midway between Trenton and Bordentown.

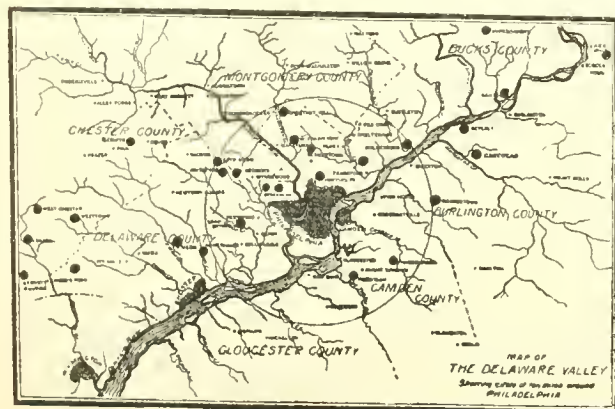


TABLE II.
SPRING MIGRATION, 1905.
EARLIEST DATES OF ARRIVAL OF THIRTY-TWO SPECIES AT TWENTY-THREE STATIONS OUTSIDE THE PHILADELPHIA CIRCLE

List of Other Species Reported by Observers during 1905 and Additional Notes. Winter Notes relate to Winter of 1904-5. Localities are in Pennsylvania Unless Otherwise Indicated.

Pied-billed Grebe, *Podilymbus podiceps*. Two at Beverly, N. J., April 6-16 (*Street*), Bridesburg, March 1 (*Miller*), Wayne, April 24 (*Rogers*).

Horned Grebe, *Colymbus auritus*. Bridesburg, March 13 (2), April 12 (*Miller*).

Dovekie, *Alle alle*. One shot in Grassy Sound, Cape May, N. J., November, 1904 (*Hand*).

Herring Gull, *Larus argentatus*. A flock of 50 to 200 birds fed daily through winter 1904-5 on the fill at Cape May, N. J., where the dredge is at work. Last seen, May 16 (*Hand*). Last seen on Delaware at Bridesburg, April 27 (*Miller*).

Black-headed Gull, *Larus atricilla*. Cape May, N. J., April 30 (*Hand*).

Cormorant, *Phalacrocorax dilophus*. Cape May, N. J., March 23 (*Hand*).

American Merganser, *Merganser americanus*. Fairmount Park, December 29, 1904, and Darby Creek, Radnor township, April 1 (*Rogers*), Cape May, N. J., March 23 (*Hand*), Bridesburg, January 5, March 10 (*Miller*).

Red-breasted Merganser, *Merganser serrator*. Numbers killed on the Delaware in March and April near Richmond (*Miller*).

Blue-winged Teal, *Querquedula discors*. Two shot on Cedar Grove Dam, Phila., April 18 (*Morris*).

Bufflehead, *Charitonetta albeola*. Richmond, March 18 (5), (*Miller*).

Goldeneye, *Clangula clangula americana*. Bridesburg, January 5 (*Miller*).

Whistling Swan, *Olor columbianus*. Three at Williamsport, March 20 (*Koch*). Four large birds apparently swans flying over Germantown, May 22 (*Brown*).

Bittern, *Botaurus lentiginosus*. Yardville, N. J., May 7 (*Allison*), Cape May, N. J., April 17 (*Hand*). Crum Creek near Swarthmore, April 15 (*Carter*), Moorestown, N. J., April 22 (*Mickle*).

Least Bittern, *Ardetta exilis*. Arrived at Richmond, April 27 (Miller).

Great Blue Heron, *Ardea herodias*. George School, April 15, Bristol, April 9 (Keim), Concordville, April 15 (Styer), St. Davids, April 25 (Rogers) Haverford, June 11 (Rogers).

White Egret, *Herodias egretta*. Cape May, N. J., August 2 and 5 (Hand).

Night Heron, *Nycticorax n. naevius*. An occupied colony in Upper Merion township, Montgomery county (Rogers).

King Rail, *Rallus elegans*. Richmond, May 31, nest with 12 eggs (Miller), Bristol, May 14 (Keim).

Woodcock, *Philohela minor*. Cape May, N. J., March 12 (Hand), Haverford, a pair, March 11 (Serrill), George School, June 4, Torresdale, March 17 (Miller).

Wilson's Snipe, *Gallinago delicata*. Woodbourne, April 12 (Pickering), Crosswicks, N. J., May 9 (Abbott and Fowler), Bristol, April 16 (Keim), West Chester, May 11 (Roberts), Concordville, March 18 (Willits), Kennett Square, March 25 (Pennoch), Cape May, N. J., March 10 (Hand), Medford, N. J., April 16 (Morris), Richmond, March 30 (Miller).

Knot, *Tringa canutus*. Cape May, N. J., May 1 (Hand).

Semipalmated Sandpiper, *Ereunetes pusillus*. Cape May, N. J., April 9 (Hand).

Yellow-legs, *Totanus melanoleucus*. Cape May, N. J., March 19, large flocks, April 4 (Hand), Bridesburg, two, May 19 (Miller).

Solitary Sandpiper, *Helodromas solitarius*. Radnor, last seen May 14 (Rogers).

Upland Plover, *Bartramia longicauda*. Woodbourne, April 10 (Pickering), Cupola, Chester county, Pa., May 15 (Hunt), Frankford, April 18 (Miller).

Spotted Sandpiper, *Aetitis macularia*. Two in the Paoli Barrens, April 30 (Rogers).

Hudsonian Curlew, *Numenius hudsonicus*. Cape May, N. J., April 25 (Hand).

Black-bellied Plover, *Squatarola squatarola*. Cape May, N. J., May 1 (Hand).

Semipalmated Plover, *Aegialitis semipalmata*. Cape May, N. J., May 4 (Hand).

Turnstone, *Arenaria morinella*. Cape May, N. J., May 1 (*Hand*).

Bobwhite, *Colinus virginianus*. A flock was fed in our meadow, Yardville, N. J., all winter (*Allinson*).

Dove, *Zenaidura macroura*. Three about Downstown, N. J., all winter (*Fair*).

Turkey Vulture, *Cathartes aura*. Three at one time at Concordville, first week in February during deep snow—unusual in midwinter (*Styer*), until November 12 at Radnor (*Rogers*), wintered as usual near Lenape (*Carter*).

Red-tailed Hawk, *Buteo borealis*. Last seen at Radnor, March 26 (*Rogers*).

Red-shouldered Hawk, *Buteo lineatus*. Perkasio, April 21 (*Rutter*), last seen at Radnor, April 1 (*Rogers*).

Broad-winged Hawk, *Buteo platypterus*. Uncommon but breeds at Radnor, (*Rogers*).

Bald Eagle, *Haliaeetus leucocephalus*. Summit, N. J., May 8 (*Holmes*).

Sparrow Hawk, *Falco sparverius*. Perkasio, April 21 (*Rutter*).

Osprey, *Pandion haliaetus carolinensis*. A pair seen on the Brandywine near Embreeville, April 30 (*Jackson*).

Long-eared Owl, *Asio wilsonianus*. Two wintered in the yard and saw one May 29, Yardville, N. J. (*Allinson*), three wintered at Oak Lane (*Harlow*).

Short-eared Owl, *Asio accipitrinus*. Arrived on meadows at Bridesburg, November 12, 1904, a colony of 16 to 18 remained till March 1 (*Miller*).

Saw-whet Owl, *Cryptoglaux acadica*. Oak Lane, January 2, 1905 (*Harlow*), Dec. 1, Cape May, N. J. (*Hand*).

Kingfisher, *Ceryle alcyon*. Just starting nest near Chester, April 15 (*Carter*), Crum Creek near Swarthmore, middle of February (*Moore*), Lansdowne, Jan. 14 (*J. H. Austin*).

Yellow-bellied Sapsucker, *Sphyrapicus varius*. Summit, N. J., February 7 and 14 (*Holmes*), last seen April 14, Radnor (*Rogers*).

Red-bellied Woodpecker, *Melanerpes erythrocephalus*. Nested near Hunting Park (*Miller*).

Red-bellied Woodpecker, *Centurus carolinus*. Haverford, May 9, I am sure there was no mistake as the excellent view I had

of it in several positions left no room for doubt (*Linton*), Columbia, April 9 (*Wisler*).

Flicker, *Colaptes auratus luteus*. One seen at Yardville, N. J., December 31, 1904 (*Allinson*), several wintered at Oak Lane (*Harlow*).

Yellow-bellied Flycatcher, *Empidonax flaviventris*. Lansdowne, May 10 (*A. J. Pennoek*), St. Davids, May 23 (*Rogers*).

Olive-sided Flycatcher, *Nuttallornis borealis*. Lopez, May 28 (*Behr*).

Phoebe, *Sayornis phoebe*. One seen Oak Lane, January 20 (*Harlow*), nest with eggs West Chester, April 9 (*Jackson*), nest nearly finished Haverford, April 1 (*Rogers*).

Horned Lark, *Otocoris alpestris*. Perkasio, January 26 (*Rutter*), Knowlton, February 11, 12, 15, March 12 to 26 (*Tyler*), Swarthmore, 15 on February 7 (*Palmer*), very large flock at Oak Lane all through February (*Harlow*).

Prairie Horned Lark, *Otocoris alpestris praticola*. Summit, N. J., February 12 (*Holmes*).

Crow, *Corvus brachyrhynchos*. Birds sitting on two nests April 2, Ardmore (*Baily*).

Bobolink, *Dolichonyx oryzivorus*. Ardmore, May 14 seen in three localities (*Baily*).

Meadow Lark, *Sturnella magna*. No noticeable migratorial increase in spring at Crosswicks, N. J. (*Abbott*).

Cowbird, *Molothrus ater*. Wintered at Cape May, N. J., (*Hand*).

Red-winged Blackbird, *Agelaius phoeniceus*. Wintered in flocks at Cape May, N. J. (*Hand*).

Rusty Blackbird, *Euphagus carolinus*. Six at Lenape, March 19 (*Carter*).

Purple Finch, *Carpodacus purpureus*. Perkasio, April 9 (*Rutter*), Haverford, April 25 and 30 (*Linton*).

Crossbill, *Loxia curvirostra minor*. Media, April 15 (*Moore*).

Goldfinch, *Astragalinus tristis*. Perkasio, April 30 (*Rutter*).

Snowflake, *Passerina nivalis*. Summit, N. J., February 10 to 17 from 200 to 300 (*Holmes*), Swarthmore, 35 on February 17 (*Palmer*), St. Davids, 5 on February 13 (*Rogers*), Germantown, February 15 (*F. M. Day*), Oak Lane, February 26, flock of twenty (*Harlow*).

Mr. Day submits the following notes on the flock of 25 to 35 observed by him. They were running rapidly about on the snow-crust feeding from the surface and flying up a foot or two to pick at a dead reed. Their tracks were long in the lightly drifted snow on the crust. On the ground they were perfectly silent but as they rose on the wing all together they uttered a musical vibrating *peent*, and circled about a moment, quickly alighting again. At last they took a final flight, disappearing through the trees, not settling on them, into the Wissahickon valley. Their chief characteristic of movement seemed to be agility. They ran about in the liveliest way and half jumped, half flew up at dried seeds a foot or so above the snow.

Vesper Sparrow, *Pooecetes gramineus*. All winter at Crosswicks, N. J., (*Abbott*).

Savanna Sparrow, *Passerculus sandwichensis savanna*. Last seen Radnor, April 28 (*Rogers*).

Henslow's Bunting, *Ammodramus henslowii*. Saw and heard it singing near Cape May Court House, July, and at Bear Swamp east of Medford, July 3 (*Stone*).

White-crowned Sparrow, *Zonotrichia leucophrys*. Lopez, May 8 (*Behr*), Williamsport, May 7 (*Koeh*), Summit, N. J., May 14, (*Holmes*), Columbia, April 30 (*Wisler*), Rancocas, N. J., May 8 (*Haines*), Westtown, May 6 (*Smedley*). Media, April 30 (*Allen*), Lansdowne, May 14 (*W. R. White*), Frankford, May 1 (*Miller*).

White-throated Sparrow, *Zonotrichia albicollis*. Last seen Columbia, April 23 (*Wisler*), all winter at Yardville, N. J. (*Allinson*), Bristol, April 9 (*Keim*), Burlington, N. J., April 28 (*Carter*), Beverly, N. J., May 21 (*Street*), Kennett Square, May 10 (*Pennoek*), Haverford, May 21 (*Linton*), Ardmore, May 21 (*Baily*), Overbrook, May 12 (*Hunt*), Media, May 8, arrived September 22, 1904 (*Allen*), May 21, Lower Merion (*Rogers*), Oak Lane, May 21 (*Harlow*), Frankford, May 27 (*Miller*).

Tree Sparrow, *Spizella monticola*. Last seen Columbia, March 26 (*Wisler*), Perkasio, March 3 (*Rutter*), Bristol, March 19 (*Keim*), Burlington, N. J., March 14 (*Carter*), Downstown, N. J., April 2, scarce (*Fair*), Radnor, March 16 (*Rogers*), Oak Lane, April 25 (*Harlow*), Frankford, April 21 (*Miller*).

Field Sparrow, *Spizella pusilla*. Seen several times during winter, Lansdowne (*A. J. Pennock*), and near St. Davids (*Rogers*), one at Haverford, January 14 (*Rogers*).

Junco, *Junco hyemalis*. General winter resident, last seen at Summit, N. J., April 30 (*Holmes*), Columbia, April 9 (*Wislér*), Perkasié, April 21 (*Rutter*), Downstown, N. J., April 23 (*Fair*), Media, April 24 (*Moore*), Radnor, April 26 (*Rogers*), Oak Lane, May 2 (*Harlow*), arrived at Media, October 10, 1904 (*Allen*).

Song Sparrow, *Melospiza cinerea melodia*. Reached Williamsport, March 9 (*Koch*), Perkasié, February 23 (*Rutter*).

Swamp Sparrow, *Melospiza georgiana*. All winter at Crosswicks, N. J., (*Abbott*), Bristol, (*Keim*).

Fox Sparrow, *Passerella iliaca*. Wintered in West Fairmount Park, Phila. (*Hunt*), last seen Radnor, April 1 (*Rogers*).

Cardinal, *Cardinalis cardinalis*. Two nests on Pensauken Creek, N. J., each with three eggs, April 15 (*Hunt*), Columbia, April 2 (*Wislér*), at least three pairs fed all winter in the yard (*Allinson*), all winter at Westtown.

Rough-winged Swallow, *Stelgidopteryx serripennis*. At Valley Falls, April 22 (*Brown*), nesting at Mendenhall, Chester county, April 22 (*J. D. Carter*).

Cedarbird, *Ampelis cedrorum*. Flock of seven wintered at Cape May, N. J. (*Hand*).

Northern Shrike, *Lanius borealis*. Oak Lane, February 22 (*Harlow*).

Migrant Shrike, *Lanius ludovicianus migrans*. One, Haverford, March 28 (*Rogers*).

White-eyed Vireo, *Vireo noveboracensis*. Nest with young just hatched at Torresdale, May 29 (*Miller*).

Blue-winged Warbler, *Helminthophila pinus*. Brood of two with young Cowbird left nest June 11, West Chester (*Jackson*).

Golden-winged Warbler, *Helminthophila chrysoptera*. Burlington, N. J., May 14 (*Carter*), Oak Lane, May 6 (*Harlow*), Frankford, May 18 (*Miller*), Haverford, May 13 (*Linton*).

Nashville Warbler, *Helminthophila rubicapilla*. Beverly, N. J., May 27 (*Street*), Oak Lane, September 28, 1904 (*Harlow*), Frankford, May 10 (*Miller*).

Cape May Warbler, *Dendroica tigrina*. Williamsport, May 7

(*Koch*), Kennett Square, May 11 (*Pennock*), Haverford, May 12 (*Linton*).

Yellow Warbler, *Dendroica aestiva*. Eggs by May 11 at Frankford (*Miller*).

Myrtle Warbler, *Dendroica coronata*. Single birds all winter at intervals at Crosswicks, N. J. (*Abbott*).

Bay-breasted Warbler, *Dendroica castanea*. Haverford, May 14 (*Serrill*), Ardmore, May 14 and 21 (*Baily*), Media, May 16 (*E. Fussell*), Oak Lane, May 13 (*Harlow*), Kennett Square, shot, May 8 (*Pennock*).

Louisiana Water Thrush, *Seiurus motacilla*. Beverly, N. J., May 21 (*Street*), Wissahickon Creek, June 14, pair evidently with young (*Rogers*).

Hooded Warbler, *Wilsonia mitrata*. Williamsport, May 4 (*Koch*), Swarthmore, April 30 (*Roberts*), Oak Lane, May 6 (*Harlow*), Media, May 8 (*Moore*).

Wilson's Warbler, *Wilsonia pusilla*. Germantown, May 11 (*Brewer*), Haverford, May 13 (*Serrill*), May 10 (*Linton*), Ardmore, May 14 and 21 (*Baily*), Media, May 12 (*E. Fussell*), Lansdowne, May 19 and 22 (*White*), Oak Lane, May 7 (*Harlow*), Westtown, May 13 (*Smedley*).

Titlark, *Anthus pensilvanicus*. Woodbourne, May 6 (*Pickering*), Bristol, April 16 (*Keim*), Ardmore, flock of 50, March 11 and 100 March 25 (*Baily*), Frankford, March 7 (*Miller*).

Carolina Wren, *Thryothorus ludovicianus*. Columbia, May 7 (*Wisler*), all winter at Westtown.

Winter Wren, *Olbiorehilus hiemalis*. Last seen Media, May 7 (*Moore*), Oak Lane, May 5 (*Harlow*).

Long-billed Marsh Wren, *Telmatodytes palustris*. Arrived on Pensauken Creek, N. J., May 7 (*Hunt*).

Bewick's Wren, *Thryomanes bewickii*. Through the kindness of Mr. W. E. Clyde Todd, we have received the following list of occurrences of Bewick's Wren in Western Pennsylvania, based upon his own experience and that of his collectors, or those of the Carnegie Museum. As the paper on Fulton county birds (pp. 40-44) was already paged, it was impossible to use this information in that connection, so it has been inserted here with a cross reference.

Mr. W. H. Phelps found a pair of Bewick's Wrens, June 25, 1895, on the eastern side of Sideling Hill, about two and a-half miles from Needmore, Fulton Co., and on June 28-29 five were seen near Clearville, Bedford Co. All these were found along the roadside fences.

July 1-2 in the vicinity of Charlesville and Springville, Cole-rain Twp., Bedford Co., the bird was found in two spots. Two pairs frequented the fence rows of a lane and a family of seven were found among burnt and fallen timber on the summit of Tussey's Mountain.

Mr. Thaddeus Surber, June 2, 1898, found a few on the summit of the mountain ridge one mile west of Riddlesburg, Bedford Co., and it was common at the base of Tussey Mountain, near Entriiken, Huntingdon Co.

Mr. Todd found a female and four young June 7, 1899, on the summit of Sideling Hill, Fulton Co. Specimens from all these localities are in the Carnegie Museum collection.

Further north in the state, S. N. Rhoads saw two May 27, 1896, at Round Island, Clinton Co. (*Auk*, 1899, p. 313), and Thaddeus Surber took one at Tamarack Swamp, in the same county, while August Koch secured one at Williamsport (Maynard's Birds of Eastern N. A., p. 505). Mr. Rhoads also shot one at Beaver, Beaver Co., April 27, 1898.

Brown Creeper, *Certhia familiaris americana*. Last seen Columbia, April 2 (*Wisler*), Perkasio, April 1 (*Rutter*), Bristol, March 12 (*Keim*), Radnor, April 7 (*Rogers*), Oak Lane, April 10 (*Harlow*), Frankford, March 28 (*Miller*).

Red-breasted Nuthatch, *Sitta carolinensis*. One, December 17, 1904, Wayne (*Rogers*).

Tufted Titmouse, *Æolophus bicolor*. Williamsport, April 13 (*Koch*), Columbia, April 2 (*Wisler*), Perkasio, March 24 (*Rutter*), all winter at Westtown. Several observers in the lower counties failed to see it through the severe winter, but it reappeared in April.

Black-capped Chickadee, *Parus atricapillus*. Columbia, April 2 (*Wisler*), Perkasio, December 24, 1904 (*Rutter*), Concordville, May 7 (*Willits*).

Golden-crowned Kinglet, *Regulus satrapa*. Last seen Haver-

ford, April 25 (*Linton*), Oak Lane, April 20 (*Harlow*), Perkasic, April 2 (*Rutter*), Knowlton, March 20 (*Tyler*).

Blue-gray Gnatcatcher, *Poliophtila caerulea*. Media, May 1 (*Moore*), May 2 (*Allen*), May 7 (*Fussell*). The first two records are of the same bird and probably the later record also. In each instance the identification was made with great care under favorable conditions.

Gray-cheeked Thrush, *Hylocichla aliciae*. June 4, singing at Lansdowne (*A. J. Pennock*), and at Ardmore, May 12 (*Baily*).

Hermit Thrush, *Hylocichla guttata pallasii*. Saw one singing at Lansdowne, April 17 (*A. J. Pennock*).

Robin, *Merula migratoria*. Sandiford, Phila., December 31, 1904; had eggs, April 14 (*Miller*), nest with one egg, April 9, Crum Creek (*Hunt*).

Bluebird, *Sialia sialis*. Swarthmore all winter (*Palmer*), set of four eggs, Overbrook, April 27 (*Hunt*), no noticeable migratorial increase in spring at Crosswicks, N. J., (*Abbott*), nine or ten seen early in February at Downstown, N. J. (*Fair*).

City Ornithology

The following birds have been observed in the Friends' Western Burial Ground, Sixteenth and Race streets, Philadelphia, from the Friends' Library windows, by Mary S. Allen :

AUTUMN MIGRATION, 1904.

Towhee, October 13, 1904.

Hermit Thrush, three on October 14, and six on October 15, 1904.

White-throated Sparrow, October 14 and 15, 1904.

Robin, three seen during autumn, last for the year November 10, 1904.

SPRING MIGRATION, 1905.

Bluebird, reported March 7.

Robin, first seen March 16, next March 23 and throughout season.

Song Sparrow, reported March 16, seen March 20 and 23.

Flicker, March 20.

Hermit Thrush, a pair April 26, May 2 and 3.

Towhee, a pair April 26, May 3 and 12.

White-throated Sparrow, April 26 and May 1.

Brown Thrasher, April 29, May 2, 3, 6 to 12.

Wood Thrush, May 5, singing from 4:30 to 6 p. m.

Catbird, May 6 to 12.

Ovenbird, May 6, 11 and 13.

Veery, May 11.

Baltimore Oriole, May 12, singing.

Maryland Yellow Throat, a pair May 12 and 13 singing.

Worm-eating Warbler, May 12.

Abstract of the Proceedings of the Delaware Valley Ornithological Club for 1905

January 5, 1905. Annual Meeting. Thirty-one members present. Mr. Frederick W. Stack was elected a Corresponding member. The old officers were re-elected for the ensuing year, as follows: President, Dr. Spencer Trotter; Vice-President, William A. Shryock; Secretary, Wm. B. Evans; Treasurer, Stewardson Brown.

This being the fifteenth anniversary of the founding of the club, the Chairman Mr. Shryock gave a brief review of its history and Messrs. Serrill, Pennock and Stone spoke of different phases of the club's work and of early reminiscences. The meeting then adjourned to the annual collation.

A committee was appointed to consider the collecting of data on the distribution, habits, etc., of the birds of Pennsylvania and New Jersey with a view to future publication.

January 19, 1905. Twenty-four members present. Mr. Chreswell J. Hunt was elected an Active member.

Mr. Stone made a communication on "Immature Plumages, what they are, and what they mean."

In the discussion which followed Mr. Pennock stated that in two instances of the breeding of the Marsh Hawk that had come under his notice, the male bird was in neither case in the blue-gray plumage.

Mr. J. Harold Austin reported a Kingfisher near Lansdowne January 14.

February 2, 1905. Twenty-one members present. "A Trip to the Florida Keys" was the communication of the evening, presented by Messrs. Stewardson Brown and Henry W. Fowler. While birds were only incidental to other observations they

noted quite a number of species during the two weeks spent in cruising in a steam launch between the Marquesas on the west and Vaca Key on the east, the Great White Heron (*Ardea occidentalis*) being the most interesting species seen.

February 16, 1905. Twenty-six members present. Clark J. Peck read a paper on "The Overbrook Grackle Roost." (See *antea*, p. 36.)

A Snowy Owl captured recently at West Chester, Pa., was reported by Mr. Stone, and Mr. Hunt stated that he had noticed fresh Woodpecker holes in an orchard at Overbrook.

March 2, 1905. Thirty-two members present. Mr. Baily presented a number of excellent lantern slides illustrating his communication on "Work with the Camera at Pocono and Elsewhere." A series of portraits of young Turkey Vultures, a sitting Woodcock which permitted herself to be stroked with the hand and a Chipping Sparrow feeding her young on the photographer's hand were among the best of the pictures.

An epidemic in a Crow roost at Ogontz, Pa., was described by Mr. Harlow, who had counted thirty-five dead crows, while blindness and irregular flight were noticed in others.

Five Snow Buntings (*Passerina nivalis*) were reported by Mr. Baily at St. Davids, and on a recent visit to Mt. Pocono large numbers of the same species were observed. Dr. Trotter and Mr. Palmer also reported a flock of about thirty-five at Swarthmore, Pa., on February 23, and Mr. Harlow saw fifteen or twenty at Oak Lane, Phila., on February 26.

Mr. Lorrilliere reported Grackles (*Quiscalus quiscula*) at Collingdale, Delaware county, Pa., on February 23.

March 16, 1905. Twenty-six members present. Dr. Trotter read a paper entitled "Type Birds from Eastern Pennsylvania and New Jersey" in which he spoke of some twenty-nine species of which the original type specimens had been discovered in the neighborhood of Philadelphia, and commented on the exact localities where some of them had been shot, and circumstances connected with their capture.

Dr. Fellows spoke of a small Crow roost about two miles south of Swarthmore and Mr. Morris who had visited Baltimore on March 5 remarked on the large numbers of migrating Robins, Red-winged Blackbirds, Bluebirds and Flickers in that vicinity. Mr. DeHaven, who had been gunning at Cape Charles, Va., stated that on February 27 and 28 during eight hours no less than one hundred flocks of Pintail Ducks had passed overhead, flying northward.

A large section of tree trunk showing elaborate excavations by the Pileated Woodpecker (*Ceophloeus pileatus abieticola*) had been collected by Mr. Otto Behr at Bellasylva, Wyoming county, Pa., and was on exhibition at the meeting. The work was done during December last.

April 6, 1905. Twenty-five members present. Mr. Emlen read a paper entitled "A Ten Days Visit to the Adirondacks," describing birds observed about a camp at Raquette Lake during August, 1904. Two nests of the Osprey (*Pandion haliaetus carolinensis*), were observed, and the Hermit Thrush (*Hylocichla guttata pallasii*), was still in song on August 8. Other interesting species observed were Arctic and American Three-toed Woodpeckers (*Picoides arcticus* and *americanus*), Canada Jay (*Perisoreus canadensis*), Rusty Blackbird (*Euphagus carolinus*), Spruce Grouse (*Canachites canadensis*), and Herring Gull (*Larus argentatus*). Mr. Pennock commented further upon the bird-life of this region which he had visited in June, 1878, on which occasion he found Black Duck (*Anas obscura*), Hooded Merganser (*Lophodytes cucullatus*), and Red-breasted Merganser (*Merganser serrator*), on the lake and had seen the Wild Pigeon (*Ectopistes migratorius*), nesting. An egg that he had collected was given to the collection of Princeton University.

Mr. Steele stated that a Sapsucker (*Sphyrapicus varius*) had recently struck the City Hall tower.

Mr. Stone read a letter from Mr. J. G. Dillen, describing the injury done by Woodpeckers (presumably this species) to hickory trees, which resulted in the wood being stained by moisture entering at the pits made by the bird and rendered unsalable for axe-handles for which purpose the timber was largely bought up.

April 20, 1905. Twenty-five members present. Messrs. Charles H. Rogers, Wayne B. Morrell and William Johns were elected Associate members.

William B. Evans made a communication on "Birds of Cape Ann, Mass.," observed during the latter part of June, 1902. Fifty-four species were observed.

Mr. Morris reported Wilson's Snipe (*Gallinago delicata*), as common on Rancocas creek, near Medford, N. J., April 16, and Mr. Keim observed them at Tullytown, Pa., on the same day and also a number of Titlarks (*Anthus pensilvanicus*). Mr. Fowler stated that several Snow Geese presumably (*Chen h. nivalis*), had been taken at Edgewater Park, N. J., during the winter. Mallard, Black Duck, Widgeon were rather common, and during the fall Blue and Green-winged Teal and Pintail. During the present spring Canvas-backs and Red-heads had been reported taken by gunners and all three species of Mergansers. Mr. Carter described the singular attitude of a Bittern (*Botaurus lentiginosus*) observed perching on a tree.

May 4, 1905. Twenty-five members present.

Mr. Paul Vossburg and Prof. A. L. Wheeler were elected Associate members.

Mr. S. N. Rhoads addressed the meeting on the "Birds of the Colorado Delta in Midwinter," describing a trip taken in February last in an open boat from Yuma, Arizona, to the mouth of the Hardy river and up that stream for about sixty miles and thence overland to Calexico on the California-Mexican boundary. Owing to the unprecedented floods, the trip was one of considerable hardship, and was less successful than was expected. The habits of the White Pelican (*Pelicanus erythrorhynchos*), Gambel's Quail (*Callipepla gambeli*), Abert's Towhee (*Pipilo aberti*), Rock Wren (*Salpinctes obsoletus*), and other species were described. (See Proc. Acad. Nat. Sci., 1905, pp. 676-690.)

Mr. Carter read a letter from Syracuse, N. Y., describing the habits of a Shrike (*Lanius ludovicianus migrans*), which had a nest with eggs on April 30. It was observed to carry a small bird-victim in its claws.

Mr. Morris reported a Blue-winged Teal at Olney, Philadelphia, April 22.

May 18, 1905. Thirty-two members present.

The resignations of Messrs. J. Harris Reed and James L. Stanton, Jr., were accepted with regret, and Mr. Wm. E. Hannum was transferred to the corresponding list.

Mr. Samuel C. Palmer reviewed at length the distribution of the American Robin and its several races, tracing the winter and breeding ranges from data compiled from the published records.

Mr. Morris presented a list of eighty-seven species of birds observed at Eagle's Mere, Sullivan Co., Pa., May 12-14. He was impressed with the fact that while the progress of vegetation was much behind Philadelphia, perhaps two or three weeks, the difference in the migration was but a few days, resulting in the presence of many birds in leafless tress which do not occur with us until the foliage is well expanded.

Two pair of White Crowned Sparrows (*Zonotrichia leucophrys*) were observed, and Black Duck and Bufflehead Ducks were seen on the streams.

Mr. Stone reported a Veery singing in the swampy woods at Medford, N. J., early on the morning of May 14.

Messrs. Baily and Rogers had identified seventy-one species of birds on the 14th, along Darby Creek, Delaware Co., Pa.

October 5, 1905. Nineteen members present.

Mr. John D. Carter was elected an Active member.

Mr. Stone described a trip to Fulton county, Pa., undertaken in June last, in company with Dr. W. E. Hughes and Mr. Wm. L. Baily (see *antea*, pp. 40-44).

Mr. Harlow stated that the birds seen by him in Franklin county during 1903 and 1904 corresponded closely to those seen by Mr. Stone. He added that he had in addition noted the Brown-headed Nuthatch (*Sitta pusilla*) August 12, 1903, near Monterey, Franklin county, within half a mile of the Maryland boundary. He said :

"The fauna here was carolinian, being marked by an abundance of such birds as the Cardinal, (*Cardinalis cardinalis*,) Tufted Titmouse, (*Bacolophus bicolor*,) etc. I was attracted to the Nuthatch by hearing a note which was entirely new to me. Following the sound I found the bird on the dead limb of a chestnut tree, not twenty feet above me, and was able to identify it in a moment. I spent half an hour watching it, and during this time heard the note frequently. It seemed to me to be best described as a shrill chirp, but possessed some of the Nuthatch characteristics. Twice the bird left the tree in pursuit of passing insects, each time it was head down and swooped off, describing an arc and returning to a nearby tree. It did not appear at all shy, but its movements were quick and nervous, and quite different from the deliberate action of the White-breasted Nuthatch. On a second trip to the vicinity, August 8-14, 1904, I saw none of this species, and I should regard it as a straggler."

Mr. Rehn reported Wild Turkeys as rather common in Diamond Valley, Huntingdon county, Pennsylvania.

October 19, 1905. Seventeen members present.

Mr. Albert Linton was elected an Associate member.

Mr. Harlow read a paper on the birds of southern Pike county, Pennsylvania, observed August 15 and October 2. His observations covered the valley of the Wallenpaupack Creek. One of the most interesting records was that of a Solitary Sandpiper with young barely able to fly, indicating the breeding of the species in the vicinity.

Mr. Stone referred to differences in the names occurring on some of the first ten plates of Audubon's Elephant Folio, showing that there were two editions of the first two parts of the work.

Mr. Hunt reported a Coot (*Fulica americana*) on Pensauken Creek, N. J., on October 14.

November 2, 1905. Twenty members present.

Mr. Thomas C. Desmond was elected an Associate member.

Mr. Pennock described the bird-life of the Indian river district of Delaware.

November 16, 1905. Twenty members present.

Mr. David E. Harrower was elected an Associate member.

Mr. Hunt read a paper entitled "Gleanings from a Bird Lover's Note Book." A Barn Swallow had been seen to snatch flies from a cow's back, and a Spotted Sandpiper had been noted walking upon a railroad track engaged in catching spiders. The song of a Field Sparrow was described which varied so much from the usual strain that it was quite unrecognizable. A caged Red-winged Blackbird had been seen to rob a Cardinal, which was his fellow prisoner, of seeds crushed by the latter. It had been noticed that Tree Sparrows instead of feeding directly from the weeds as did the Goldfinches, dislodged the seeds by their shaking and then gleaned them from the snow.

Messrs. Stone and Wright reviewed the recent A. O. U. Congress in New York.

Mr. Rehn exhibited a Corn Crake (*Crex crex*) shot on November 11, at Dennisville, Cape May Co., N. J., by H. Walker Hand.

Mr. Harlow reported a Saw Whet Owl (*Cryptoglaux acadica*) captured at Oak Lane, Philadelphia.

December 7, 1905. Nineteen members present.

The resignations of Messrs. William D. Carpenter and Samuel M. Freeman were accepted with regret.

Messrs. Baily and Carter spoke of "Characteristic Rarities of Pocono Lake," supplementing the contribution from Mr. Carter in the last CASSINIA. The Alder Flycatcher (*Empidonax traillii alnorum*), and Prairie Horned Lark (*Otocoris alpestris praticola*), were observed, and also the Thrush previously reported, and which Mr. Baily felt convinced was Bicknell's. As, however, the bird had not been satisfactorily seen, and opinions differed as to the resemblance of its song to the published description of that of *Hylocichla aliciae bicknelli*, the status of this species as a breeder in Pennsylvania is still in doubt. Mr. Baily had also heard what he took to be the song of the Carolina Wren (*Thryothorus ludovicianus*), but its occurrence in the Pocono Mountains was so unlooked for that it was considered to require further verification.

December 21, 1905. Twenty-two members present. Mr. Charles H. Rogers was transferred from Associate to Corresponding membership owing to his removal from the vicinity of the city.

A paper prepared by Mr. Richard L. Miller entitled : " Breeding of the Florida Gallinule (*Gallinula galeata*) in Philadelphia County," was read by Mr. Rehn, (see *antea* pp. 24-32).

Mr. Harlow reported quite a number of birds at Tinicum, Delaware county, Pa., on December 18, including several Swamp Sparrows, Fox Sparrow, a Chewink, a few Robins, and a flock of fifteen Horned Larks.

Mr. DeHaven who had just returned from Cape Charles, Va., had noticed Black-bellied Plover (*Squatarola squatarola*), Semipalmated Sandpipers (*Ereunetes pusillus*), and seven or eight Ipswich Sparrows (*Passerculus princeps*). A large flock of birds possibly Red Phalaropes were wheeling over the bay.

Mr. Stone reported a young Bald Eagle (*Haliaeetus leucocephalus*), shot December 18, on the Perkiomen creek, near Norristown, and a Snow Owl shot November 20, in Richmond, Phila., was exhibited. Several others of the latter species had been shot near Philadelphia during the present month.

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* The Editor will be glad to know of omissions in order that the titles may be included next year. It is our desire to make the bibliography as complete as possible, which can only be done through the coöperation of our readers.

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Hix, Geo. E. Brewster's Warbler at Englewood, N. J. *Auk*, xxii, p. 417.

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Bird Club Notes

THE Publication Committee of the Club will welcome papers or notes relating to the birds of Pennsylvania, New Jersey or Delaware, from any one, whether a member of the Delaware Valley Club or not. Such communications will be read at the next meeting, and if passed upon favorably by the Committee will be published in CASSINIA. While primarily the proceedings of the Club, all articles submitted to CASSINIA are given equal consideration, and choice is based entirely upon the value of the matter contained and the literary merit of the paper.

* * *

For the portrait of Bonaparte, published in this number, we are indebted to Mr. Ruthven Deane, who kindly furnished us a photograph taken from a lithograph in his possession.

* * *

The Club held sixteen meetings during the year, with an average attendance of twenty-four; fifty-seven members being present at one or more meetings.

* * *

A well attended field meeting was held on May 30, at "Catoxen Cabin," a shack in the pines near Medford, New Jersey, owned by several members of the Club. The neighboring woods were thoroughly explored, and a visit paid to Bear Swamp in the pine barrens to the eastward.

* * *

The Club was represented at the twenty-third congress of the A. O. U. in New York City, by Messrs. Baily, Pennoek, Rhoads, Rogers, Stone and Wright, as well as Messrs. Holmes, Miller, Todd and Wisler of the corresponding members. The following papers were presented: "Similarity of the Birds of the

Maine Woods and the Pocono Mountains, Pa.," and "Exhibition of Lantern Slides," Wm. L. Baily; "Andreas Hesselius, Pioneer Delaware Ornithologist," C. J. Pennock; "Some Unpublished Letters of Wilson and Some Unstudied Works of Audubon," "The Probability of Error in Bird Migration Records," and "Applicability of the Mutation Theory to Birds," Witmer Stone. Mr. Stone was appointed a member of the committee to consider revision of the A. O. U. Code of Nomenclature.

* * *

Thirty members and fourteen Corresponding members of the D. V. O. C. are members of the A. O. U. The total membership of the latter in Pennsylvania is 71 and in New Jersey 38, of these 56 are resident, within twenty-five miles of Philadelphia. For the sake of comparison it may be added that the A. O. U. has 136 members in Massachusetts, 125 in New York—70 in New York City; and 53 in the District of Columbia.

* * *

Members of the club made a number of trips during the year especially during the summer holidays. Dr. Hughes has been moose hunting in Nova Scotia, and Dr. Trotter spent the summer there; Samuel N. Rhoads spent the early part of 1905 in Southern California and Lower California, Stewardson Brown was botanizing through August in the Bermudas and J. A. G. Rehn was catching grasshoppers in Florida. G. S. Morris, I. N. DeHaven and Guy Meyers have been shooting on the Virginia coast, and Stone and Coggins have been to Nantucket and Martha's Vinyard, respectively, while Fowler and Keim have been pursuing minnows through most of the streams of Maryland and Southeastern Pennsylvania. The birds of the various counties of Pennsylvania have been studied diligently, Stone, Hughes and Baily having been in Fulton, Morris in Sullivan, Harlow in Pike, Fowler in Cameron, Carter, Baily, Weygandt and Stone in Monroe, Rehn in Huntingdon and Brown in Fayette.

OFFICERS AND MEMBERS

OF THE

Delaware Valley Ornithological Club.

1906.

SPENCER TROTTER, M. D., *President*.

WILLIAM A. SHRYOCK, *Vice-President*.

HERBERT L. COGGINS, *Secretary*, 923 Arch St., Phila.

STEWARTSON BROWN, *Treasurer*, 20 E. Penn St., Germantown.

ACTIVE MEMBERS.

WILLIAM L. BAILY, Ardmore, Pa.	Founder.
STEWARTSON BROWN, 20 E. Penn St., Germantown, Phila.	*1891
JOHN D. CARTER, Lansdowne, Delaware Co., Pa.	1900
HERBERT L. COGGINS, 5025 McKean Ave., Germantown, Phila.	1897
I. NORRIS DE HAVEN, Ardmore, Pa.	1891
ARTHUR C. EMLEN, Awbury, Germantown, Pa.	1897
WILLIAM B. EVANS, Moorestown, N. J.	1898
HENRY W. FOWLER, Holmesburg, Phila.	1894
WILLIAM E. HUGHES, M. D., 3945 Chestnut St., W. Phila.	1891
CHRESWELL J. HUNT, 1306 N. Fifty-third St., W. Phila.	1902
GEORGE SPENCER MORRIS, Olney, Phila.	Founder.
SAMUEL C. PALMER, Swarthmore, Pa.	1899
CHARLES J. PENNOCK, Kennett Square, Pa.	1895
JAMES A. G. REHN, 1918 N. Twenty-first St., Phila.	1899
SAMUEL N. RHODES, Haddonfield, N. J.	Founder.

* Date indicates year of election to Club.

WILLIAM A. SHRYOCK, 209 S. Sixth St., Phila.	1891
WITMER STONE, Academy Nat. Sciences, Phila.	Founder.
SPENCER TROTTER, M. D., Swarthmore College, Delaware Co., Pa.	Founder.
SAMUEL WRIGHT, Conshohocken, Pa.	1892

ASSOCIATE MEMBERS.

J. HAROLD AUSTIN, Lansdowne, Delaware Co., Pa.	1903
CHARLES W. BUVINGER, 911 N. Sixteenth St., Phila.	1900
JOHN E. CHAMBERLIN, 201 West End Trust Building, Phila.	1904
STIRLINO W. COLE, 116 N. Sixth St., Camden, N. J.	1904
FRANCIS R. COPE, JR., Awbury, Germantown, Phila.	1895
WILLIAM J. CRESSON, Swarthmore, Delaware Co., Pa.	1899
THOMAS C. DESMOND, 47 Barclay Hall, Haverford College, Pa.	1905
FRANK A. EATON, Lansdowne, Pa.	1904
ERNEST M. EVANS, Awbury, Germantown, Phila.	1899
A. P. FELLOWS, 4006 Chestnut St., W. Phila.	1894
GEORGE FORSYTHE, West Chester (Route 4), Chester Co., Pa.	1891
ALFRED MORTON GITHENS, 1337 Pine St., Phila.	1895
BARTRAM W. GRIFFITHS, 4024 Green St., W. Phila.	1902
REV. JOHN H. HACKENBERG, 3211 Columbia Ave., Phila.	1903
ARTHUR F. HAGAR, 626 Westview Ave., Germantown, Phila.	1906
SAMUEL S. HAINES, M. D., Mill St. & Central Ave., Moorestown, N. J.	1901
RICHARD C. HARLOW, Oak Lane, Phila.	1904
DAVID E. HARROWEA, Swarthmore, Pa.	1905
KENNETH HOWIE, 48 Sedgewick Ave., Germantown, Phila.	1904
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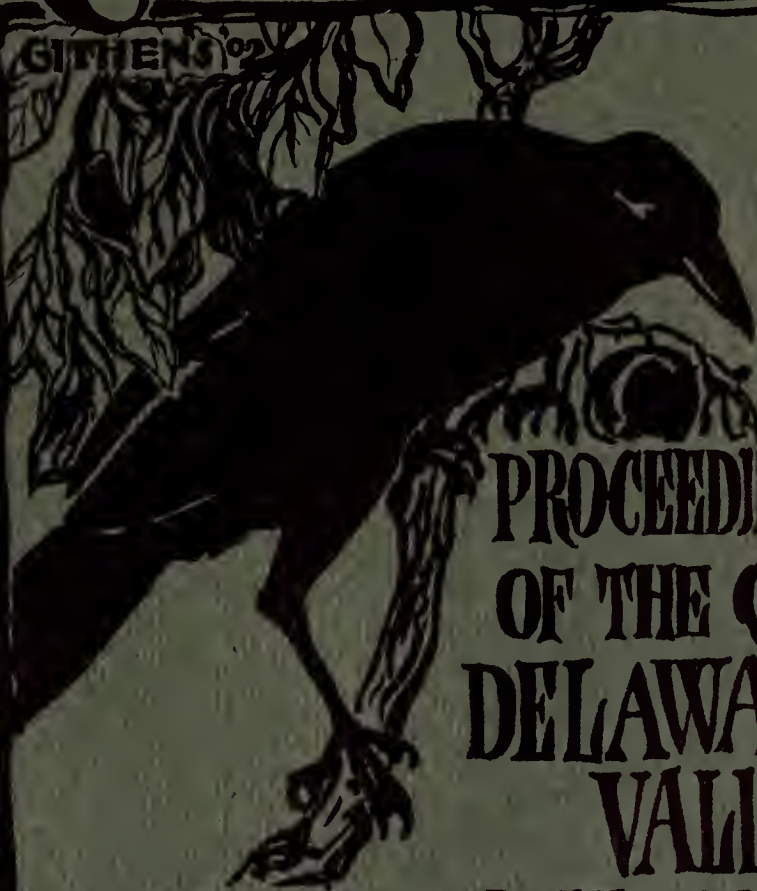
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A BIRD ANNUAL

GITHENS '02



PROCEEDINGS
OF THE
DELAWARE
VALLEY
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OF PHILADELPHIA

1906

ISSUED FEBRUARY, 1907.

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An Annual Devoted to the Ornithology of
Pennsylvania, New Jersey, and Delaware.

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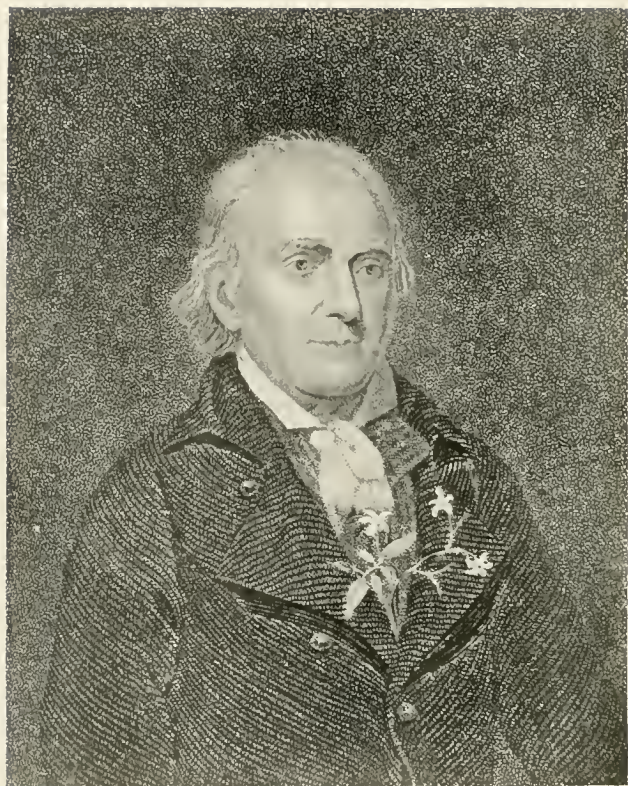
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Will. Bartram

CASSINIA

PROCEEDINGS OF THE DELAWARE VALLEY ORNITHOLOGICAL CLUB

No. X.

PHILADELPHIA, PA.

1906.

William Bartram

BY GEORGE SPENCER MORRIS

The name of Bartram had been familiar to me from childhood. This familiarity I held in common with all properly brought-up Philadelphians, and doubtless with a large majority of naturalists throughout the English-speaking world. But when I came to question myself for information regarding the man, or men, who brought fame and honor to this name, I found a distressing lack of knowledge. It came down to something like this : that John Bartram was a botanist who dwelt in a most attractive house in the midst of a beautiful garden. That his son William was a friend and patron of Alexander Wilson, and hence it was safe to conclude that he was somewhat of an ornithologist himself.

With a desire to increase my knowledge of these two men, and especially of William, the subject of this sketch, I have sought for information regarding them in such directions as lay open to me. I now venture to present a brief synopsis of the results of my research to the readers of CASSINIA.

In 1682 there came to Pennsylvania from Derbyshire, England, a worthy Quaker named John Bartram. With his wife

and four children he settled near Darby in Delaware County. The third son, William, was the only child to marry. His Quaker wife was Elizabeth, daughter of James Hunt. The children of this union were John, James and William, and a daughter who died young. John, the eldest, was the botanist. He was born March 23, 1699. I must refer but briefly to this pioneer in the study of American plant-life.

Bred upon the farm and educated in the country school, he developed at an early age a deep love of nature. Having grown to manhood, he took up the study of Latin, so as to be able to read the descriptions of plants in the Latin works of European botanists. William, in writing of his father, says: "He had an inclination to the study of physic and surgery, and did much towards relieving the ailments of his poor neighbors." There is good reason to believe that this interest in medicine and healing herbs gave the first impetus to his serious study of botany.

John Bartram married twice. His first wife was Mary Maris. She died in 1727. There were two sons, Richard and John, by this marriage. In September, 1729, John Bartram married Ann Mendenhall, who survived him. They had nine children, five boys and four girls. The third son was William, who, with his twin sister Elizabeth, was born February 9, 1739.

In 1728 John Bartram purchased a tract of ground on the west bank of the Schuylkill River near Gray's Ferry. "Here," says William, "he built, with his own hands, a large and comfortable house of hewn stone, and laid out a garden containing about five acres." Of course he must have had some necessary assistance in this work, but it is an undoubted fact that he was a skilled mechanic and mason. During his lifetime he is said to have built four other houses. There is well-executed carving about the doors and windows of the Bartram mansion. Upon a stone in the wall is cut:

"JOHN * ANN BARTRAM—1731."

Over the front door of his study is carved the inscription:

"Tis God alone, Almighty Lord,
The Holy One, by me adored.
JOHN BARTRAM, 1770."

Although a man of deeply religious nature, he was nevertheless exceedingly broad and liberal in his beliefs. So independent did he become in his religious views that in later life he was disowned by the Society of Friends. William's religious attitude appears to have corresponded with that of his father. Their views were simply those of present-day Unitarians. William, however, never severed his connection with Friends. Over the door of John Bartram's greenhouse were written these lines :

"Slave to no sect, who takes no private road,
But looks through Nature up to Nature's God."

William's boyhood was spent under the care and influence of this broad-minded, nature-loving father, and with the now famous garden growing up about him. It was not strange that he too should develop the tastes and instincts of the naturalist and seek to follow in his father's footsteps.

When William was fifteen years of age, we find the elder Bartram writing to his friend Peter Collinson of England—a wealthy Quaker greatly interested in horticulture—and enclosing some of William's drawings of natural objects. At about this time he took him on a trip to the Catskills. In 1755 Bartram writes to Collinson as follows : "I design to set Billy to draw all our turtles, with remarks as he has time, which is only on Seventh Days in the afternoons and First Day mornings, for he is constantly kept to school to learn Latin and French." One might infer from this that William and his father were not altogether regular in their attendance at First Day meeting. Young Bartram thus early showed skill as an artist, and it is evident that his father did not want him to be hampered in his studies, as he himself had been through lack of French and Latin.

In another letter written to Collinson, Bartram writes as follows : "My son William is just turned of sixteen. It is now time to propose some way for him to get his living by. I don't want him to be what is commonly called a gentleman. I want to put him to some business by which he may with care and industry get a temperate, reasonable living. I am afraid that botany and drawing may not afford him one, and hard labour

don't agree with him. I have designed several years to put him to a doctor to learn physic and surgery, but that will take him from his drawing, which he takes particular delight in. Pray, my dear friend Peter, let me have thy opinion about it."

About this time Benjamin Franklin offered to teach William the trade of printing. His father, however, did not think the outlook for printing in Pennsylvania a good one. Franklin also suggested engraving. Finally at the age of eighteen William was placed with a Philadelphia merchant named Child, and remained with him for about four years. Having thus served his apprenticeship, and arrived at his twenty-second year, he left the paternal roof for Cape Fear, North Carolina, where he set up as a trader, his uncle William having established himself there as a young man many years before. In the meantime the elder Bartram, notwithstanding his advancing years, was making frequent expeditions throughout the Eastern and Southern States in the interests of science.

The Indians were at this period in a belligerent mood. The old gentleman seems to have had no high regard for them. In one of his letters he says that the only way to make peace with the Indians "is to bang them stoutly." William appears to have been of a gentler nature, and to have felt a deep sympathy for the red man in the cruel and unjust treatment often meted out to him by the whites. It is possible that the somewhat combative nature of John Bartram may have been one of the reasons for his final exclusion from the Society of Friends.

At length through the influence of Peter Collinson, King George the Third appointed John Bartram his "Botanist for the Floridas," with a salary of fifty pounds a year. Accordingly, in the autumn of 1765 he started for the southern peninsula, and feeling the need of a companion, he took William with him, his business venture at Cape Fear having been far from successful. William states that they had been ordered to search for the sources of the river San Juan (St. John's), and that they ascended the river for almost its entire length, about 400 miles, by one bank, and descended by the opposite shore. They made careful survey of the stream, its branches, and the lakes connecting therewith. They also made notes of the lay of the land,

the character of the soil, and of the plants, birds, mammals, and fishes seen on the expedition. The report of this journey, together with most of the collections made thereon, were forwarded to England, where they met with high praise from the people and king.

William was much taken with the Floridas, and with the assistance of his father established himself as an indigo planter on the St. John's River. But this business venture also ended disastrously, and a year later we find him at work on a farm near his father's home.

Collinson, who had always taken a keen interest in the boy, now wrote that the Duchess of Portland, "a great virtuoso in shells and all marine productions," had just dined at his house and been greatly impressed with some of William's drawings. She accordingly forwarded twenty guineas and a list of objects which she wished him to draw for her. Dr. Fothergill, a wealthy Quaker naturalist of England, and a great friend of John Bartram, now began to send him orders for drawings of shells, turtles, terrapin, and other natural objects. His interest and patronage extended even further than this, for he fairly launched William on his career as a full-fledged naturalist. In 1772 he began explorations in Carolina, Georgia and Florida, and for about five years the expenses of these journeys were borne by Dr. Fothergill. Young Bartram, however, turned over to his patron all drawings and collections made on these expeditions.

In 1791 he published his principal book, entitled, "Travels through North and South Carolina, Georgia, East and West Florida, the Cherokee Country, the extensive Territories of the Muscoguees or Creek Confederacy and the Country of the Choctaws."

These southern Indians seem to have aroused a warm and kindly interest in the gentle naturalist. In his charming journal he treats in much detail of their manners and customs. He found them to be for the most part intelligent and hospitable, and he was convinced that their worst faults came through contact with the whites. This book of William Bartram's southern travels is rich in interest and graphic in its literary

style, reminding one at times of the writings of DeFoe. The poet Coleridge, in referring to it, said: "The latest book of travels I know, written in the spirit of the older travellers, is Bartram's account of his tour in the Floridas. It is a work of high merit every way."

On September 22, 1777, John Bartram died at the age of seventy-eight. After his father's death, William continued the vigorous pursuit of the study of natural history, making his home for the most part with his brother John, who inherited the mansion and its now famous botanical garden.

In 1782 William Bartram was elected Professor of Botany in the University of Pennsylvania, but declined the honor on account of ill health. He was also elected a member of the American Philosophical Society, and of various other learned bodies in both Europe and America. Bartram was clever with tools, and, as we have before said, skillful in the handling of pencil and brush. His illustrations, showing much artistic merit, may be found in several of the scientific works of his day, notably in Professor Barton's *Elements of Botany*. His literary style was for the most part simple and graphic. At times his enthusiasm in his subject caused him to be somewhat extravagant in his statements. Some of his more flowery passages remind one of the pen of Audubon. When dealing with purely scientific matter his words are always carefully chosen, intelligent and instructive.

The life and work of William Bartram are best summed up in his own words, when in speaking of himself he says: "Continually impelled by a restless spirit of curiosity, in pursuit of new productions of nature, my chief happiness consisted in tracing and admiring the infinite power, majesty and perfection of the great Almighty Creator, and in the contemplation, that, through divine aid and permission I might be instrumental in discovering and introducing into my native country some original productions of nature which might be useful to society."

And now it may be asked, "What claim has William Bartram to special recognition as an ornithologist, and why does *CASSINIA* regard him as entitled to a place in its list of men noted in this branch of study?" To this we would reply that in the

year 1802 Alexander Wilson took charge of the little school at Kingsessing, near Gray's Ferry and soon made the acquaintance of our gentle Quaker naturalist. It is our firm belief, that had it not been for this acquaintance, which soon ripened into a warm friendship, Wilson's American Ornithology would never have been carried to a successful end. In fact there is evidence to show that its inspiration and commencement were directly due to the influence and assistance of William Bartram.

All that Harris and other friends and patrons were to Audubon, he was to Wilson, and far more. Wilson was well nigh penniless and friendless; with none of Audubon's grace of person and charm of manner, to say nothing of his brilliant and highly cultivated artistic powers. But in this uncouth Scotchman Bartram recognized the mind and heart of a true nature lover, and patiently began to give him the instruction and assistance which finally resulted in his taking up the study of birds as his life work. It is evident that all the ornithological lists and notes of William Bartram were put at Wilson's disposal. Wilson quotes him constantly and gives him the full credit due for this generous help. Unquestionably Bartram's list of birds of the eastern United States was the most correct and complete record of its kind before the time of Wilson; while his "Anecdotes of a Crow" and "Description of *Certhia*" show him to have been a close student of birds. Wilson in writing to him in 1807 says, "The receipt of yours of the 11th inst., in which you approve of my intended publication of American Ornithology gave me much satisfaction; and your promise of befriending me in the arduous attempt commands my unfeigned gratitude. From the opportunities I have lately had of examining into the works of Americans who have treated of this part of our natural history, I am satisfied that none of them have bestowed such minute attention on the subject as you yourself have done. Indeed they have done little more than copied your nomenclature and observations and referred to your authority. To have you therefore to consult with in the course of this great publication, I consider a most happy and even auspicious circumstance; and I hope you will on all occasions, be a rigid censor and kind monitor, whenever you find

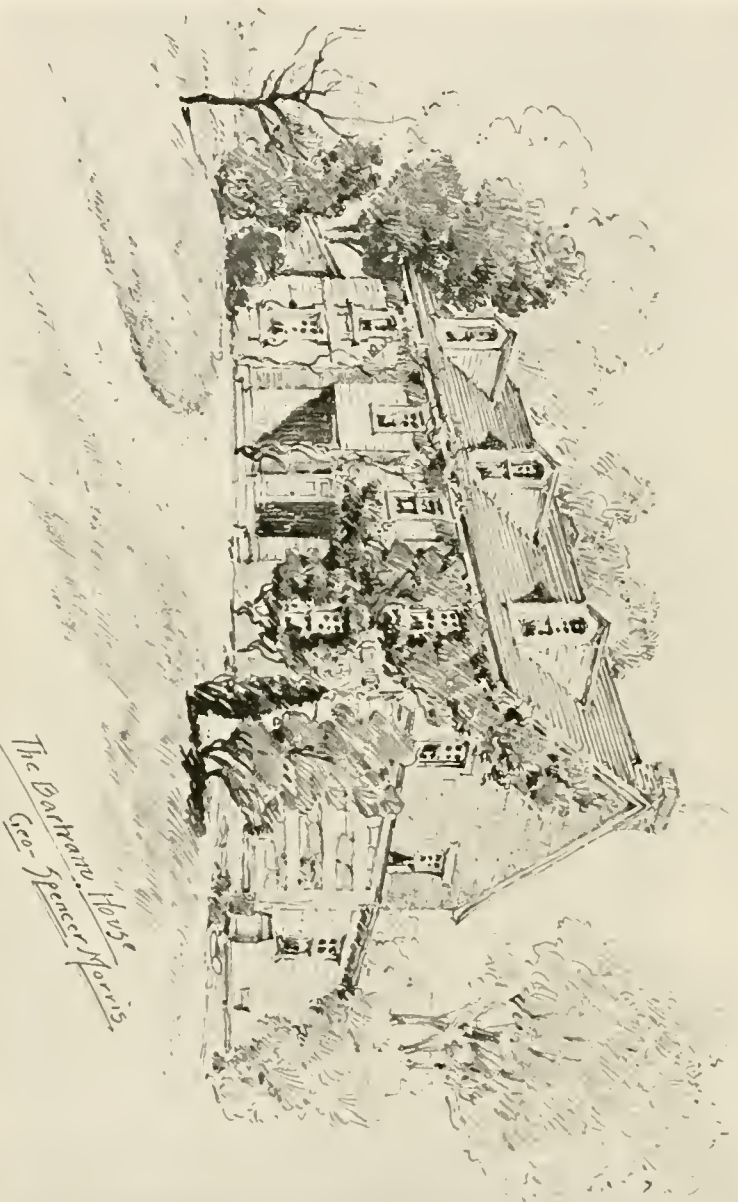
me deviating from the beauties of nature or the truth of description." At this time Wilson was undoubtedly making diligent search for all the extant literature on American birds, and the above quotation clearly shows that he had found no writer who had dealt more fully with the subject than William Bartram.

It is doubtless true that Bartram's most important work was in botanical lines, but ornithology, conchology, ichthyology and entomology also claimed his close attention. In short he was a fine example of the old-fashioned naturalist, a type now well-nigh lost. The day of excessive specialization had not arrived, the country was young and its wonders unstudied. The two Bartrams were among the very first of our really important naturalists. It is not strange that their work should have been of a somewhat general character at a time when every step revealed wonders hitherto unknown. It is hard for us now to realize the utterly crude state of scientific knowledge in this country a century ago. The naturalist of to-day cannot but feel a little envious of the splendid field for original work which lay open to these old pioneer students.

Wilson was not the only one who received assistance and advice from William Bartram. A biographical sketch by an unknown author says, "Mr. Bartram was a source of reference to many naturalists of his day, and there was scarcely an American or foreign writer who attempted the natural history of this country but applied to him for information on relative treatises, and in many instances his generous contributions were received and diffused to the world by other writers without giving credit to the proper author."

William Bartram never married and the ties of family therefore did not interfere seriously with his work. His disposition was affectionate and kindly, and his demeanor somewhat reserved. He was short in stature; the expression of his countenance was refined and intellectual. While his general health was good his constitution was never vigorous or robust. His temperate habits and outdoor life were doubtless the cause of his reaching the advanced age of eighty-five years.

On the morning of July 22, 1823, he was writing the description of a plant in the little study used by his father and himself



The Bartram House
Geo. Sencer 1905

THE BARTRAM HOUSE, BARTRAM'S GARDEN, PHILADELPHIA

for such purposes. He then rose from his desk to take his customary stroll through the beautiful garden. He had gone but a few steps from the door when he burst a bloodvessel, and thus suddenly closed his useful life.

A Study of the Solitary Vireo

BY CORNELIUS WEYGANDT

The song of the Solitary Vireo brings home to me the realization that there are birds' songs as distinctively minor as minor poets. Beautiful and mad and memorable as it is, the Solitary's song is as surely minor, compared with the Wood Thrush's, as Herrick is minor compared with Milton. It is no belittlement of Herrick to call him a minor poet, and in calling the Solitary Vireo a minor singer I intend all praise. I would place him first of all minor singers as artist, although quality of voice and long love make me hold more precious the Field Sparrow's song, as surely a minor bird-song as is the Solitary's, or the Southern Water Thrush's, another bird that, like my Vireo, the books have failed to praise sufficiently. My purpose is to praise the Solitary Vireo, but inasmuch as I would praise him only to his honor, I want at once to confess that his song must not be contrasted with the songs all of us will own as major, the songs of the Bobolink, Catbird, Brown Thrasher, Mockingbird, Veery, Hermit Thrush, and Wood Thrush. I would confess as frankly that the Solitary Vireo's song would suffer, heard side by side with the Orchard Oriole's, the Winter Wren's, the Fox Sparrow's, far greater as an artist as the Vireo is than these last-named three. For associations' sake I hold dearer the Redwing's fluted "okalce," the Whitethroat's "far lonely silver strain," the House Wren's homey prattle, the Bluebird's soft warble with all the spring in it, and the purity of a child's heart. But what a fine fellow the Solitary is! Like so many woodlanders, he is sober enough in his dress and gentle enough in his ways; but he is every feather of his five and a half inches the artist, a madcap singer, a gloater in the dripping sweetness of his bridal-song.

It was in northeastern Pennsylvania, where the Poconos look

over to the Catskills, that the Vireo's song won me. It was exciting to me to hear unexpectedly so beautiful a bird-song; it was doubly exciting in that it was the first time I had listened to it; it broke in on me with all the thrill of a discovery, for I had not read that the Solitary was so fine a singer. I had stopped day after day, as I passed his home by the roadside, to look at him and his mate busy about their nest. I had taken a Cowbird's egg from it in the hope that, that danger removed, they might rear their young, indiscreet though they had been in trusting them to so low a limb in so exposed a place; I had even smoothed her dark head as she sat on the nest and chucked her under her soft white chin, but no song had I heard save the *tuuweet, tuuweet, twitcheuweet, turu*, that proclaimed him a Vireo from its likeness to the Redeye's song, but not that bird but his fine self, through its greater keenness and fulness. Then the day after the catastrophe, the day after we found the parents in distress, and but one young in the nest, and it dead, came the revelation. I was following the winding red road through the low rock oaks of the mountain-top, conscious that the Solitary Vireo was singing, but paying no special heed to him, when all of a sudden there leaped up a jetting little song, like the Catbird's in its ecstasy, but gentler and more caressing. From such intricate sweet warbling it fell to lively trilling, not unlike the Yellowbird's prolonged trilling, to rise at the end to another Catbird-like burst. I looked up and just above me was the Solitary Vireo, revolving his head in that dizzying fashion so characteristic of his kind, as he eyed about for prey. But the madness of remating was upon him, and he soon fell to warbling and trilling again, preceeding each outburst with his usual song. I had heard few birds with songs so long and so varied, and put him down then and there as the best of his race, and one of the very best of any race.

Charming in his trustfulness and little ways, I had known him before; and beautiful, as I had watched him as he sat on the nest, relieving his mate, that you could scarcely distinguish from him, for her ramble for food. But now he was revealed a really great singer, of little volume though his finer notes. For two weeks after this day, July 15th, you might hear this fine

full song here, there, and everywhere, through the mountain-top woods. He would break into it about every half hour, sometimes about every quarter hour, and continue singing for some five minutes with short intervals of silence between. Then for twenty minutes, or maybe only for ten minutes, he would be busy hunting, uttering, as he hunted, his usual keen song. In few half hours would you total a silence of more than five minutes. In the hotter hours he would be silent for longer intervals but you would hazard a good chance of hearing him at any time of day if you halted for ten minutes anywhere within his usual hunting-ground. His usual *twuweet, twuweet, twiet-chuweet, turu*, carries a good quarter of a mile, but his bridal song is not of such penetrating quality. To get its every note you must be within a hundred feet of the bird singing.

The full story of his life during the three months I lived with him on the top of Buck Hill I cannot write, but what I did learn of it interested me deeply. When I came upon the nest on June 16th, the birds had just finished it, and as I visited it for a week afterwards I would generally find her in the nest. This week she was laying. At its end I looked into the nest for the first time and found in it four eggs, very like the familiar Redeye's, with an irregular circle of fine brown and black dashes and spots around the greater end, and a Cowbird's egg. I took the intruder's egg and one of the Vireo's eggs, for the Cowbird had indented it in dropping in her own. On blowing them I found both fresh. I did not look into the nest again until July 14th, the day after the tragedy, but I had noticed the old birds feeding young a week earlier.

The comradeship of the two during incubation had been very winning. As one sat upon the eggs the other would come flying swiftly to a dead limb above and then drop to the little branch from which the nest was swung, landing not a foot away from it. Here the incoming bird would mew, ever so caressingly, and the bird on the nest would answer in the same low tone. Sometimes the interchange of greetings would be followed by interchange of positions, the sitting bird first unsettling itself gently from the eggs and then flitting off to alight beside its mate. The incomer would lift itself into the nest as deftly and

then after a few more mutual mews the relieved bird would be off to the oak-tops. Once the sitting bird, this time I suppose the male, sang while brooding on the nest when the other returned.

Almost on the wood-edge as it was and not ten feet back from a little opening off the road and scarcely over head-high, it was easy to watch the nest. I could follow the bird's comings and goings through the open wood without difficulty. I got to know well some details of their living and something of their ways. Since they took turns on the nest I had a chance to compare their appearances, but with the exception that after two weeks' sitting one seemed duller than the other I could not say which was which nor could I tell which sat longer save that it seemed that I found the duller one oftener on the nest. This one, which, of course, I took to be the female, was much the tamer of the two, so tame that gradually she came to eat hard-boiled eggs and crumbed cracker from the finger of one of the ladies from the nearby hotel.* Anyone could stand within six feet and pick out her dainty coloring, which justified the name "Blue-headed Vireo" much more than her ways did the name "Solitary." I have chosen the name Solitary as more usual and more euphonious, greatly regretting that so charming a bird is unnamed in the vernacular. As she sat on the eggs her white chin, projecting over the side of the nest, contrasted quite distinctly with her dark blue-gray head and green-grey back. The white line over her eye and the two wing-bars of yellowish-white could be easily distinguished. When she hopped off of the nest you could see the yellow flush on her sides. In the tree-tops she looked brownish-gray.

She sat faithfully in all weathers. When the heat was so intense that she panted even in the shade in which she had built, and in steady downpours of rain, and on days of cold wind when her cradle swung as if it would turn over, she was at her post. After much devotion it was the hardest of fates that the young should be destroyed. Just what destroyed them I never could determine. It may have been deer-mice, of which there

* Cf. E. R. Lyman, in *Bird Lore*, 1906, p. 123.

were legion roundabout, it may have been a chipmunk, or a red squirrel, or a snake. Sometimes I think that overkindness in feeding the mother brought death to the young, for she would regurgitate the egg and cracker given her and feed it to them. Again, I wonder if lice were not responsible, for there were many in the nest, and even while the one squab that had not disappeared was lying in the nest the mother came back and carefully ate the lice off the nest and the little bird, whose plump and unwounded body puzzled me as to how it came by its end.

The lateness of the nest's building would indicate that its builders had already tried to raise a brood before this attempt, and the presence a hundred yards further down the mountain of a nest whose eggs were destroyed about June 1st, made it more likely that the nest of which I write was the second failure.

During the remating of mid-July the male started to build again just back of our shack, but he never got further with it than the wrapping of the silk of little cocoons around the two twigs of the fork of a little maple. I saw him here off and on for a week; but either the site proved on second consideration disadvantageous, or the birds concluded it was too late now to attempt a third brood. After the beginning of the last week in July, I did not see him fussing about the little maple, although he still visited us daily. I never saw his mate there at all, though she frequently accompanied him on his visits to our trees until August 13th. This was the last day until September 2d on which I heard him sing his shorter song, *twuweet, twuweet, twietchuwweet, turu*. The mating-song had died away two weeks earlier. Early in September, after an absence of three weeks, and now moulting, the two revisited us again. It may be the moulting had kept them in hiding. I would like to think that it was family cares, but I am afraid it was not, for when they returned there were no young with them, as there were with two pairs of Redeyes, late in the season though it was. September 7th was the last day on which I saw the Solitary Vireo, and then it was in the neighborhood of the nest where I had watched them for a month.

It is not as they were, the last time I saw them, nor as the settled brooding pair of the late June, but as the wandering

madeap singer and his mate of mid-July that I shall remember them. And when I think of that quickening song there comes with the memory a sense of the presence of those mountain-top woods, the tanny odor of their decaying leaves, the beauty of their pale-yellow false foxgloves standing stiffly up from their brown floor, the infinity of their rank on rank of low rock oaks. And forever now I may not see one of these three without recalling the others, and the half light of those woods to which they gave such charm—rock oaks, false foxgloves, and the Vireo's song.

Summer Birds of Western Pike County, Pennsylvania

BY RICHARD C. HARLOW

The primeval forests which once towered above the rugged sides of the Alleghanies are fast becoming a thing of the past, and no more is it possible to journey for days at a time under the shade of the giant hemlocks. With the denudation of the forest land come totally different conditions in the avifauna. Our northern breeders which used to be found commonly over all the higher mountains are gradually being pressed back into favored localities, in which they may still find respite from the hot rays of the sun that beat down upon dead stumps and rocky slopes where once were cool forests and beds of damp moss. It is a sad scene, and one which I know has been dwelt upon time and time again; yet fresh from the contemplation of the changed conditions I feel constrained to add my testimony, as well as my regret for the fearful destruction that axe and fire have wrought. Our only gratification is that there still remain spots where we may still find bits of the original forest remaining, and with them the remnants of the Canadian fauna which was formerly so much more of a feature in the wild life of Pennsylvania. I have been privileged to look upon one of these small bits of timber, wofully small it is true, but just enough to make one hunger for more, and in the following pages I shall endeavor to present such birds as it was there my good fortune to see.

Between the counties of Pike and Wayne, in the northeastern part of the State, the Wallenpaupack creek pushes its way to join the Paupack river. It is a typical mountain stream, harboring numerous trout, and its banks a mass of laurel thickets. The mountains here have been for the most part denuded of their original forest some forty years back, and in the place of the hemlock has sprung up in most cases a deciduous forest of

sugar-maple, birch and chestnut, all these trees reaching a considerable size, while on certain slopes there is naught save a low scrub growth of huckleberry and other shrubs.

In several spots however about the valley of the Wallenpau-pack are to be found small clumps of hemlocks, the principal group being located in the vicinity of Loanna, Pike county. It is in these places, the pitiful remains of the primeval forest, that we find the typical northern birds. Along the creek are dense clumps of rhododendron and laurel, practically impenetrable, and here the Canadian Warbler literally abounds, but it is nearly impossible to find the nest in the protecting fastnesses of the rhododendron.

To this vicinity I have made two trips, the first in August, 1905, and again June 9-16, 1906. The lateness of the season rendered my notes of the first trip of little value so far as indicating the breeding birds of the region; but I have eliminated all those concerning which there was any doubt in this connection, so that my completed list of ninety-four species contains only breeders. Mr. Bayard Long was with me on both trips and Mr. Paul Lorrilliere on the second, and to both of these gentlemen I am under obligations for much valuable assistance. The latter in particular I found to be an excellent arbitrator with rural game wardens and I cheerfully recommend him as such.

On both these trips we stopped in the vicinity of Loanna, Pike Co., and practically all the notes are from Pike rather than Wayne Co. The elevation varies from 1800 to 2000 feet. Of the general Natural History of the region I am able to say but little. Deer are decidedly rare; wildcats common and bear not scarce. Our nearest adventure with a bear was the sight of a cub doing a mile in record time, in an opposite direction from us. Squirrels are abundant, both gray and red, and in 1905 I saw one of the black variety. Coons, foxes, mink, skunks and other small mammals are very common. Flowers were very abundant, many typical northern varieties such as *Clintonia borealis* being noticed. Along with these were several northern butterflies, *e. g.*, *Vanessa milberti*, *Argynnis atlantis*, etc. It was the birds that I was particularly concerned with.

One of the first sights which greeted us on our drive from the station to our lodging-place on the second trip was a Bald Eagle soaring on motionless wings above the valley. This bird though local was not rare, and was usually seen along the borders of some lakes dammed for the production of ice. These lakes also attracted other species. On them we saw our only Night Herons and Green Herons, but very few of either. Ospreys also had their abodes here and about the borders the Nashville Warbler was a rare summer resident. I noted it but once in 1906, a male in full song.

The Great Blue Heron is rare in this region and but two were seen by our party, while only one Woodcock was recorded.

By far the most abundant water bird was the Spotted Sandpiper, which is everywhere a common summer resident. At least four pairs of these birds were nesting about a small mill dam, and it was noticeable that they kept to the open water, not being found in the forests. Just the opposite was the case with a pair of their cousins, the rare Solitary Sandpiper, which I saw in 1905 along with three young. It was in the deepest part of the forest, where the stream tumbled noisily over a sort of log jam, that I came upon them. I could scarcely convince myself that these birds had nested in Pennsylvania, but the size of the young entirely precluded any question of protracted flight, so that I was forced to believe that the parent had been unfortunate in their first attempt at rearing young, and these were the result of a second effort. After a scramble over the logs and the stones, I succeeded in catching one of the young, and having inspected it, released it. In the meantime the parents showed but little concern over my action, though one, probably the male,* silently flew several times about me. The rest of the young had hidden among the logs, and upon releasing my captive he rushed out into deep water and proceeded to *swim* for the logs. The current was too strong, however, and took him past and on down stream. I was just becoming apprehensive as to his safety, when he climbed upon a stone and bowed in his best form.

* Cf. *Oölogist*, March, 1906, p. 39.

Another denizen of these mountain streams is the Water Thrush. Both species were found, but in my experience *S. noveboracensis* was the most common. *S. motacilla* seemed rare and shy. On June 12 we were close to the nest of the latter, but searched for it in vain.

All through these woods are found the Ruffed Grouse. Their young were about four or five days old when we arrived, and every day we would meet with one or more broods. The little ones were adepts in hiding, while their parents fairly outdid themselves in attempting to draw us from them. After the failure of the broken-wing tactics, they invariably tried to frighten us. Puffing themselves up after the manner of a Sandpiper, they would approach cautiously, all the time uttering a distinct hissing sound, and finally becoming disgusted at their vain endeavors would fly away. These birds were heard to drum frequently.

Hawks and Owls are rather common. The Sharp-shinned is seen frequently yet is by no means common, while the Cooper's is scarce. The Red-tail and Red-shouldered are both common, the former the more so. Several nests were observed far up in hemlocks. The Broad-winged Hawk was noticed in 1905. Of the Owls the Screech Owl is of course the most common, while the Barred is taken frequently, but the Great Horned is the best known Owl of the region. They are frequently shot, and to our delight we were serenaded by them on June 14. According to tradition these birds may always be found at a locality called "Owl Hoot," where they nest.

Doves were common and in song. Of the Cuckoos the Black-billed was the only one noticed and was everywhere common as was the Kingfisher in suitable localities.

Both the Downy and Hairy Woodpeckers are found commonly and nest, and on both trips I met the lordly Pileated Woodpecker which seems to be of regular occurrence though rare. Contrary to my expectations they were not hard to approach. Numerous dead hemlocks attested to the drilling powers of their bills, and I was led at great labor to climb one of the great trunks in search of a nest only to find that the hole "did not go down."

I was glad to hear the harsh note of the Sapsucker on June 12, and later to see the bird in its summer home.

The orchards were the homes of the Flycatchers and they were in abundance; the Kingbird, Great Crested Flycatcher and Wood Pewee, and about every barn and bridge the Phoebe; but they were all surpassed in abundance by the homely Chebec. This was *the* bird of the orchards and was everywhere one of the most abundant birds. Singularly enough the one nest which I found was not in the usual situation, but in a birch in the woods. Next to the Chebec the Cedarbird was the most common bird in the fruit trees; practically every orchard having its pair and some several. One thing that struck me was the fact that nearly every pair I observed began building on exactly the same date,—June 10. In orchards and woodlands the Flicker as usual was found abundantly.

Every evening the Nighthawks would gather in small bands and sail back and forth in the gloaming, uttering their discordant cries. These continued until dark when the Whip-poor-wills took up the refrain. Both these birds were more common than the Chimney Swift, which was found in only limited numbers nesting frequently in barns. Of the Hummingbirds there were more than I have ever seen before: one nest was found on June 12. One of the most interesting birds which it was my privilege to meet was the Prairie Horned Lark. The summits of several of the mountains about Loanna consist entirely of upland meadows, flat stretches of land with no trees whatever. Very little bird life is to be observed in these situations, a few Meadowlarks, Vesper and Grasshopper Sparrows being about all. It was in these places that we came upon this bird, and so far as I could ascertain they were regular, being observed on both trips. When not nesting they travel aimlessly about after the manner of their northern relatives in winter. In 1905 I saw them several times in flocks of about seven individuals, evidently family parties, but in 1906 they were seen chiefly in pairs. One of these birds evidently had a nest in a field where the young grain was about three inches high, but though both male and female frequently flew in with grasshoppers in their beaks, we sought in vain. Mr. Lorrilliere first suggested to me

the similarity of their flight to that of the Bluebird. The only note which I heard them utter was essentially the same as that of the typical *O. alpestris*.

In these same pastures we noted the Savanna Sparrow evidently nesting in small numbers. Occasionally these little birds would dart out from under one's foot and speed away, resembling the Sharptailed Sparrow of the salt marshes.

Crows are found commonly in this county, but they are not such a feature as in the Delaware Valley. Already in June they were traveling about in small bands, for after the nesting season, Crows seem to wish for company, and the Pike county individuals are no exception.

The Blue Jay is rather common and well distributed, and their discordant cries are heard throughout the wooded districts.

We were startled one day by an ominous cry from down in the valley far below us. It was the unmistakable "erruch, erruch" of a Raven. We did not see the bird but it was reported as of occasional occurrence, and I am satisfied that we could not have been mistaken in the note.

There were few open swamps and Redwinged Blackbirds were necessarily scarce, but I was at a loss to account for the apparent rarity of the Cowbird, as on the two trips but three individuals were noted. Rather more common is the Meadowlark, which is to be found in all suitable fields though abundant nowhere. Along the roads, about houses, and in the orchards was found the Baltimore Oriole. Never before have I heard Orioles sing so richly as those of Loanna. It is one of my most treasured memories of the place. The Grackles were not common here and I saw only one or two. Whether they were *aeneus* or *quiscula* I cannot say, but I presume they were *aeneus*.

On June 15th while strolling along a road through the open country a flock of birds about the size of Bobolinks flew over our heads at a considerable distance and soon were lost to sight. Later in the afternoon, while still wondering what they were, we came upon the whole flock perched in some walnut trees. A glance told us they were American Crossbills. The flock of about thirty contained both mature and immature birds, though the latter predominated. They were by no means shy but sat contentedly,

some high, some low, in the walnut trees, frequently giving utterance to a metallic "chuck." This note was also sounded when on the wing; their actions reminded me exactly of their behavior at lower altitudes in winter and seemed to brand them as aimless wanderers.

In 1905 the Purple Finch was one of the features of this county. In the orchards and in the hemlocks they were to be found still uttering their ringing song. We were, therefore, looking forward to renewing their acquaintance, but they had gone, and only a casual one or two were to be seen.

Goldfinches, however, were abundant everywhere, except in the deep woods, and they, like the Cedarbirds, impressed me with being more abundant in this region than I had ever seen them elsewhere. Chipping, Field and Song Sparrows were also plentiful, and in the clearings the Towhee and Indigobird were apparently increasing in numbers. It has only been in recent years that these latter birds have been found in this region, but they are now firmly established. The huckleberry barrens, where they are now frequently to be seen, are also the haunt of the Chestnut-sided Warbler, while the Red-eyed Vireo frequents the taller trees that are scattered here and there.

Where the barrens meet the hemlock forest we found the Black and White Warblers. We were too late for their eggs, as the two nests I discovered both held five young. One of these was placed two feet up in a hole of a decaying stump. The Scarlet Tanagers likewise reared their young on the edge of the hemlocks, a nest being found on June 13th.

All through the town of Loanna and the surrounding country are found the Barn and Cliff Swallows in equal numbers. The latter have several small colonies in the town, the largest comprising about seventeen pairs. So far as I can learn, these birds do not encroach upon each other's territory. The irregularity of the Cliff Swallows in nesting particularly impressed me, some having full-fledged young, while others were but laying the foundations of their nests. About the ponds the Tree Swallow is also found, but they were by no means common.

However interesting is the country already mentioned, the hemlock wood was our delight. One of the first birds to be

noticed there was the Magnolia Warbler. Everywhere we heard the sprightly song of the male far up in the hemlocks. Of all the Warblers in this region, I should call this the most abundant. The nests are loosely-made structures of coniferous twigs, and from five feet to twenty feet above the ground. One taken on June 11th held four fresh eggs. The parents are very fearless in the protection of their homes, flitting about with expanded tails like the Redstart, and uttering a startled "chip." From far up in the hemlocks we could hear the "que-e-e" of the Olive-sided Flycatcher, and on August 20, 1905, I was fortunate enough to come upon a family of these birds, parents and three young. The latter, though fully able to fly, continually followed the old ones about the hemlocks with drooping wings and expanded tails, frequently uttering their "que-e" and begging for food. With the Olive-sided Flycatcher, the Golden-crowned Kinglet is found, but all search for their nests was in vain. In a single clump of giant hemlocks two or three pairs were located by the songs of the males. This is an energetic effort well described by Chapman, and the performer is far more easily heard than seen. The Kinglets seem to frequent the very tops of the tallest trees, and in a whole morning spent in watching them we did not see one at a closer range than fifty feet. Under these difficulties, and with innumerable hordes of bloodthirsty mosquitoes, it is small wonder that nests are rarely found.

In company with the Kinglets the Blackburnian and Black-throated Green Warblers are found, and rather to my surprise we met with the Pine Warbler frequently, and their Chippy-like song was a feature of some sections of the woods. Very often was the insect-like "zee-zee-zee-zee" of the Black-throated Blue Warbler heard, and Mr. Long found a beautiful little nest on June 17th. The Black-throated Blue by no means confines itself to any one kind of land, but was found everywhere—in the swampy undergrowth, either in the high deciduous trees, or far up in the hemlocks. Of course the Ovenbird is found breeding commonly all through these woods, and their habits are essentially the same as in the lower Delaware valley. In the low laurel thickets along the streams the Canadian

Warbler literally abounds, and its song is constantly heard. This seems to me to differ from most warbler songs, being more energetic, after the manner of the *Geothlypis* group than like the drowsy *Dendroica* music.

With them occur the Redstarts and the Juncos. The latter are particularly common, and breed in various situations, but chiefly along the trails and pathways. All through the woodland, but especially near the streams, are the Chickadees, giving vent to their feelings in their pleasing, familiar whistle, and with them occurred now and then a song that we could only identify with the Tufted Titmouse. We could not trust our ears when we first heard it, but closer observation proved that we were correct. I am at a loss to account for the presence of this Carolinian species in this Canadian environment, but suppose it entered from the upper Delaware valley not many miles away, and, as has already been said, present conditions favor the advance of southern birds and the retreat of boreal ones in the Pennsylvania forest area.

Four other Warblers besides those already mentioned were seen by our party: the Yellow Warbler, abundant in orchards and open willow thickets along the streams; the Maryland Yellowthroat in its usual haunts; the Golden-winged Warbler, evidently rare, as only one was seen, and the Yellow-breasted Chat. The last is another southerner which probably reached this section by the same route as the Tufted Titmouse. In the same scrub-land where we noticed the Chat, the Brown Thrasher and Catbird were common, especially the latter.

One species remains which we found frequently in the hemlock woods, the Solitary Vireo. Its song is really beautiful, and justice has not been done to it. One nest was found in a hemlock some five feet up. The female sat very close, but would not let me touch her. The Solitary Vireo is found especially common in the swampy sections of the forest, where the song might be called a feature.

In the same locality the Winter Wren is seen, but is by no means common. His cousin, however, the House Wren, was as abundant as usual about the village, where also we found the Warbling and Yellow-throated Vireos, both rare, and the Rose-

breasted Grosbeak. The Grosbeak, however, is much more abundant in the second growth near the hemlock forest, where the rich song of the male was constantly in our ears. In one tree we actually counted seven males in full song. This should suffice to show their abundance.

The Robin and Bluebird were in their usual numbers, and in the woodland the Wood Thrush upheld the reputation of his family, while overhead the White-bellied Nuthatch "yanked" the grubs from the dead wood for a family of seven young arranged over a surface of bark about two feet square.

The chief disappointment of the trips was the absence of the Hermit and Wilson's Thrushes, which seems unaccountable. I noted both rarely in 1905, but as I saw neither of them last June I do not feel justified in giving them as breeders. Our complete list of breeding birds numbered ninety-four species, all positively identified, with the exception of the Raven.

The Concordville Robin and Grackle Roost

BY SAMUEL C. PALMER.

About four years ago a report was made at a meeting of the Club that the destruction of birds had been unusually great during a heavy storm in August. Among other reports there was one made by W. E. Hannum relating to the number of dead Robins and Grackles in a neglected nursery about one-half mile northwest of Concordville station, Delaware Co., Penna. About 120 Robins and Grackles were found dead under the trees which at that time were fit to be used as nursery stock. Since that time the number of birds roosting there has been greatly increased until to-day they number several thousand.

The location of this roost is on a high prominence sloping away to the north and south over rolling farm land for three or four miles in each direction. Numerous woods, orchards, and groves of trees are in sight, and there seems to be no scarcity of good roosting-places about the vicinity.

The west branch of the Chester Creek forks near Markham station about one mile distant, and one stream runs on the south about half-a-mile away while the one on the north is nearer.

The trees making up the roosting-place are chestnut and maple, chiefly the former. The maples form a double row of compact trees on the east side of the clump. The clump itself measures about 200 x 100 feet and the height not over twenty feet and nearly uniform.

The former roost of these birds was a wood a quarter of a mile to the southwest of this point. When a few years ago this wood was trimmed up and the underbrush cut out the birds left and apparently came to this neglected nursery. This old roost, according to old residents, had been in existence at least twenty-five years.

The days I selected to visit this roost, the 24th and 25th of

August, proved to be wet and disagreeable. An east wind with storm kept the sun back and rain was not infrequent. However I succeeded in getting some detailed memoranda of their arrival and departure.

My first glimpse of the roost was at 4.30 p. m. on the 24th, and at that time there were no birds in sight. A walk beneath the trees revealed no signs of feathers or dead birds to indicate the presence of enemies. At five o'clock no birds had appeared, and the first intimation that there would be any gathering came twenty minutes later, when two flocks of Grackles, numbering twenty and twenty-five birds, alighted in the tops of some spruce trees in a yard close by. A few stragglers followed, but in a few minutes all flew away together.

At 5.34 o'clock six Robins arrived, and at 5.50 o'clock two Cowbirds, the vanguard, settled in the trees. A little later two flocks of Grackles entered the roost. These did not as the first settle on the neighboring trees, but wheeled and alighted directly in the roost. Robins and Cowbirds continued to come in small scattered flocks, but the main arrivals were Grackles. The last of these noted arrived at 6.05 o'clock. Almost immediately the Cowbirds began to gather; the first flock of any consequence arriving at 6.06 o'clock, and numbering about fifty. Flocks of these birds continued to come until 6.30 o'clock, when only a few stragglers were to be seen. The Robins were now coming in increasing numbers from every direction, often at considerable height, until immediately over the roost, and then by a series of flight manœuvres settling either directly in the roost or on the trees and telephone wires close by. The Robins could be seen coming in loose, scattered flocks of eight to fifteen, or else singly, but never in compact flocks like the Grackles and Cowbirds, which, except for a few stragglers, came in flocks of 25 to 250.

On the next day the east wind was still blowing, the clouds were hanging low, and there was more rain. At 5.00 a. m. the Robins were chirping and beginning to leave the roost. A few minutes later a flock of Warblers was heard flying toward the south. I took my stand on the southwest corner, where I had a good view of the roost, and attempted to count the birds

as they came out. I found that Robins were leaving at the rate of about 100 every minute on my side alone, and an actual count of one thousand was made. At 5.05 o'clock the Grackles began to be disturbed. At 5.18 o'clock the first flock of Cowbirds rose, about fifteen in number. By this time the Robins had nearly all departed, and for the next ten minutes only Cowbirds flew out, which they did at the rate of fifty every minute on my side of the trees.

At 5.28 o'clock the first flock of Grackles, about twenty-five in number, whirled about over the trees and settled again in the roost. This was considered unusual, as they generally left at once. I think the bad weather conditions were responsible for this departure from the usual custom. The next minute, however, the whole flock of remaining birds, chiefly Grackles and Cowbirds rose in a body, and after circling around doubtfully for some minutes, flew away toward the east. The Cowbirds left the flock soon after it rose and flew toward the west. The Robins seemed to go equally in all directions. At 5.30 o'clock there were no birds left in the trees.

In summing up the situation several things seemed to be established. The Grackles came in early and settled, and were followed immediately by the Cowbirds, which had apparently been waiting for that very thing. The last to come were the Robins. In the departure in the morning the reverse was the order, the Robins scattering first, followed by the Cowbirds, and lastly the Grackles, which rose in a body from the east side of the trees where they had collected. There was very little noise during the arrival or departure, and one going by at night would not be aware of the presence of the birds, though the grove is not over twenty-five feet from the road.

It is evident that weather conditions influence the number of birds present, especially the Grackles. On Monday morning the number of birds was about the same except the Grackles, which did not count more than 500. This is significant, as on the evening before the rain fell in torrents about roosting-time.

The direction of arrival and departure of the birds was well defined. The Grackles from the east, the Cowbirds from the west, and the Robins equally in all directions.

The number of birds which regularly roosted here was estimated to be about 7500, of which 3000 were Grackles, 2500 Robins, and 2000 Cowbirds.

No Redwings were seen or heard, but a dead one was picked up a few days before my visit.

So far as I could learn this record for twenty-four hours was about the same throughout the season.

A June Trip to Pocono Lake, Monroe County, Pennsylvania

BY JOHN D. CARTER

Most of the ornithological notes from the Pocono Lake region, including those published in a previous issue of *CASSINIA*, have been made near the close of the nesting-season. An occasional nest of Hermit Thrush and Junco, and a very interesting family of Yellow-bellied Sapsuckers were reported, but it seemed probable that a search made earlier in the season would yield more complete results. With this end in view four members of the D. V. O. C., Wm. L. Baily, Wm. B. Evans, Witmer Stone and the writer, accompanied by an interested friend, reached the lake on the afternoon of the 15th of 6th month (June), 1906.

The character of the lake and the country surrounding it have already been sufficiently described. On arriving at the boat landing we were quite surprised to see instead of the usual expanse of water only the narrow Tobyhanna winding its way among a profusion of blackened stumps. The explanation of this was that the owners of the lake had opened the dam-gates and allowed most of the water to escape, in order to remove rubbish from the shores. After photographing a Kingbird's nest and eggs, and looking in vain for those of the Alder Flycatcher, the party reached the cabin at the foot of the lake before nightfall.

A bivouac under the silent stars sounds very romantic and sometimes works very well, but we were thankful to have a civilized roof over our heads, for before morning a cold mist began to drive across the lake,—a mild hint of what was in store for us. According to agreement the writer, who slept on the porch, wakened those inside to hear the hoo-hoo hoo-hoo of a Great Horned Owl, but their drowsy ears had difficulty in dis-

tinguishing the notes from the bellowings of a numerous tribe of bullfrogs which lived near our shore of the lake.

Our cabin was located on a grassy slope which was dotted with beautifully-pointed spruces, standing singly and in small clumps. The tops of these trees were the favorite resting-places of Purple Finches and Cedarbirds. Later in the season flocks of Red Crossbills resorted to them also, picking and twisting at the green, sticky cones, but usually tarrying only a few minutes at a visit. At the time of our stay the Purple Finches were in full song, furnishing a most acceptable accompaniment to the more distant Hermit Thrushes. Before we had been there many hours one of the party discovered that the Finches were carrying nesting materials to one of the upper branches of a spruce. Three days later, at the time of our departure, this nest was finished and contained one egg, while another nest near by contained four eggs. Both of these nests were of rather loose construction, placed upon horizontal limbs without any pretense of being attached to their support.

One of the chief purposes of our trip was to settle the identity of a certain small Thrush, of elusive habits, which lived in a cold spruce swamp across the lake from our cabin. To this problem many of our precious hours were devoted. Our theory was that in looking for the chief objects others of less importance might turn up incidentally. This proved to be the case, for our Thrush hunt led to the rediscovery of several interesting birds previously reported from that locality, besides the nests of Blue Jay and Maryland Yellowthroat with young, Magnolia Warbler with eggs, and no end of Catbirds' nests placed in the midst of the densest clumps of young spruces.

As for the Thrush itself we confirmed our impressions that it was a difficult matter to see it satisfactorily. Early in the morning and again toward evening it would mount to the top of some tall tree, either living or dead, and sing beautifully. To my ear the song bore no resemblance to that of the Wood Thrush or Hermit, and was longer than that of the Veery, as well as clearer, more powerful and varied. Although no specimen was secured, by piecing together all the information available we now feel satisfied that this bird is the Olive-backed

Thrush. Its nest was not to be found although we searched through rain and shine.

Perhaps our second ambition was to find the nest of the White-throated Sparrow. The birds were always to be found on a hillside which was covered with a rather dense but short growth of huckleberries and other shrubby plants. On landing from our boats near one edge of the promising territory, we spread out so as to cover as much ground as possible. Before we had reached the place which it was hoped would furnish the treasure, a brown bird crept off a nest on the ground a few feet in front of one of the party. The motion was noticed of course. The bird kept quiet and hidden for a few seconds; then it came into full view, chirping sharply in a voice which could be confused only with that of the Swamp Sparrow. It was a White-throat. The nest contained four beautiful eggs and one nestling, naked except for a tuft or two of blackish down. It was ascertained later that the eggs were quite fresh, so it has been supposed that the nestling was a Cowbird. So far as known, however, this bird has not been seen at Pocono Lake; but since it is frequent at a locality only a few miles distant, the above identification may be correct. In any case the presence of fresh eggs and a nestling in the same nest is of interest. This appears to be the first record of the nest of this bird for the State of Pennsylvania.

Upon one of our tramps we found a small, swampy tract close to the Tobyhanna, below the lake. The ground was covered with deep, wet sphagnum, which spread its spongy carpet over roots, stumps, and fallen trees. In this locality Nashville and Black-and-White Warblers were singing frequently. The presence of Veeries was also revealed by a very few of their ordinary calls. As I had never found the nests of any of these birds I decided to make a thorough examination of this small swamp. Securing a long stick for parting the foliage, I started at one side and worked slowly back and forth. A Catbird's nest, with a very indignant owner, and two or three empty nests of very definite construction, but uncertain identity, seemed to be all that the place would yield, when, upon moving the top of a two-foot-high hemlock, my eye caught the circular

arrangement of materials which so often is the most conspicuous feature of a nest. Looking more closely, I was delighted to see the four blue eggs of a Veery. The birds were silent and invisible, and remained so until our departure from the place. Their action in this case, or rather the lack of action, probably explains why the Veery's nest has the reputation of being a hard one to find. The birds simply do not help in any way.

One prominent feature of our trip has as yet scarcely been mentioned. This was the weather. If such a complicated thing could be indicated by one word, that word would be rain, writ large. Rain we had morning, noon-time and night, though not continuously, of all sizes, from mist to heavy down-pours, varied by one brisk hail-storm, and sometimes accompanied by most impressive thunder. After the hail, we were interested in revisiting the nests which we had found. Not one had been injured. Although the gates were open, the lake soon began to respond to the prodigious rainfall. While the water was rising, we found the nest and four eggs of a Spotted Sandpiper, placed between the temporary level of the lake, and high-water mark. We watched with much solicitude to see whether or not this housekeeping venture would be spoiled. The evening before our departure there still seemed to be a possibility of escape, but the next morning, as we were homeward bound, we found the eggs floating in about six inches of water. They were of no further use to the parents, so I gathered them up, and after a time placed them in cotton within a cracker-box, and stuffed the whole into a coat pocket. Late that evening I had the eggs spread upon a table at home, when I heard a clicking sound, and was astonished to find that one of the eggs was hatching! But little progress was made before bed-time, so a lamp was arranged in such a way as to furnish heat all night. By next morning we had a little Sandpiper. We dried him by means of a hot-water bag, and with many misgivings began his raising and education. The great difficulty was the supply and administering of food. The little fellow had no notion of picking up anything from the ground. The only motion which seemed like an attempt to secure food was an upward wriggling of the head and neck, as if to meet the beak of

the parent for the regurgitation process. (How young birds of this type are really fed I do not know.) Soft worms were tried, but these had to be placed well within the throat by means of forceps in order to be swallowed. Only once did a contented twitter seem to indicate an appreciation of the efforts of his foster-parents. Evidently conditions were not favorable, for on the third day his troubles ended. Considering that the egg floated in the cold lake water for probably six or more hours, and that it received practically no heat for twelve hours more, the hatching of it at all seems quite remarkable.

Beside the nests already alluded to, the following may deserve mention : Two or more of the Cedarbird, with eggs; two of the Magnolia Warbler, one building, the other with young; one or more of the Tree Swallow, with eggs; one of the Yellow-bellied Sapsucker; two of the Junco; one of the Hermit Thrush, and two of the Chestnut-sided Warbler. The young of the Black-and-White Warbler and the Small-billed Water Thrush were seen out of the nest.

The nests of the following were not revealed by the most careful search which we were able to make during our short stay, although we felt sure that they were or had been near at hand : Olive-sided and Alder Flycatcher, Golden-crowned Kinglet, Nashville, Black-throated Blue and Black-throated Green Warblers, Olive-backed Thrush, and Prairie Horned Lark, besides several more common kinds. Since some of these have seldom if ever been found in Pennsylvania, there still remains abundant incentive for us to try again.

On the whole, we vote that the trip was a success. The days were full of interest, not to say excitement; the evenings beside the fire were enlivened by the tuneful voice of the ocarina, while the pouring of heavy rain on the roof at night served only to remind us that we were warm, dry, well-fed and happy, and were having a most enjoyable outing.

Winter Bird Life in the Pocono Mountains, Pennsylvania

BY WILLIAM L. BAILY

My three short experiences in the Poconos in winter hardly warrant more than a brief mention, but the observations that I made have a direct bearing upon the food-supply and the effect of deep snow on the life of the birds that may prove of interest. Although the cold in this region is usually intense, and the ground may be covered with deep snow for weeks at a time, the birds and mammals generally survive.

An old resident of the region, Warner by name, used to say that nature would provide for the birds no matter how hard the winter might be, and that when in the fall the buds were full and many, and the catkins on the birch and alder long and fat, it indicated a severe winter, and his neighbors were warned to stop up the cracks and fill their bins with wood.

As an example of the truth of the old man's saying, when I was there from February 18 to 24, 1905, the buds on the rhododendron and laurel were remarkably full, the catkins were long and fat, and the snow was from twenty-four to thirty inches on a level everywhere, while some of the drifts were fifteen feet high. It was impractical to cross the fields or enter the woods, and my walking for two and a half days was confined almost entirely to the roads opened by sleigh travel; hence the ground I covered was rather limited.

No snow had fallen for about ten days, and the snow and cold had combined to make a thin crust on the surface, not quite strong enough to bear one's weight, which made traveling across the country almost impossible. The weeds that furnish such ample food-supply for the Finch family were buried out of sight, and thus the birds had to feed upon the buds and cat-

kins of the higher shrubs and trees, or upon food especially provided by their kind-hearted human friends.

The Ruffed Grouse feeds, I am informed, on the apple buds, which are numerous in the Poconos, and upon birch catkins, aspen and ironwood, wild azalea, and sometimes sumac, and occasionally upon laurel leaves, but not on rhododendron or alder, and when there is no snow on the ground acorns and chestnuts form a large portion of their food.

In spite, however, of the native food-supply and the hardy character of the Grouse, they will venture close to the farm house and pick up with especial relish the buckwheat and other grain thrown out for them. They soon learn to know the favored spot, and will come day after day, early in the morning, where with so little effort they can get a full meal.

One of the most interesting features of the trip was the animal and bird tracks on the snow. Although we saw but one Ruffed Grouse, there were hundreds of their tracks, besides the tracks of smaller birds; rabbits, which crossed in every direction, squirrel tracks along fences, on trees and across the woods; common skunk, mink, and apparently the tracks of a wildcat. It was most interesting to note by the impressions whether an animal had been sitting, walking, running, or springing. A Grouse had spread its wings and tail, leaving a perfect impression on the snow when it sprang into the air, and the wildcat had been making express time, spreading sixteen feet at a leap through an open field and across the road. The rabbit tracks in one place practically covered the surface for a large area, as if there had been a regular convention or camp-meeting.

The unfortunate Quail during this remarkably cold and snowy winter were apparently the only birds that could not survive. Their food-supply was practically buried and during December and January they came fearlessly up to the farmhouse to be fed, and the farmer or his wife faithfully spread buckwheat, until during several severe storms early in February, shortly before my visit, they appeared no more. In the following spring many frozen birds were found, whole coveys in several instances being discovered huddled together under fences or tangled brush. I was told that one farmer picked up twenty-

eight. During the next spring and summer the voice of the Bobwhite was silent, and not a bird was left in the region.

The Hairy and Downy Woodpeckers, especially the former, were very active, and four of them were flying back and forth among the top branches of the oaks, and uttering that shrill rattling note, well known in mating season.

The Snowflake was my greatest joy, three flocks of from five to fifteen being encountered; all near houses or on the road. The people are very fond of them, and the birds are regularly fed by the natives. One flock of a dozen were seen near the front porch of a house, eating buckwheat that had been thrown out to them; and they exercised themselves by flying, much as Bluebirds do, from the peak of the roof to the orchard trees close by, and down to the buckwheat on the ground.

The Juncos, though found in abundance on my other trips were almost absent, only three being seen. As they are accustomed to migrating they know better how to protect themselves than the Quail, and evidently had moved southward or to lower altitudes. A resident who had noticed their absence said he never before had known them to so completely desert the country at this season of the year. He had not seen one for several weeks.

The Chickadees (*Parus atricapillus*) were abundant, happy as usual, and apparently in no way affected by the snow, and found an unfailing supply of insect life under branches and half-hidden in the crevices of the bark.

Four Song Sparrows in the low lands near the stream were seen, one or two at a time, silently and persistently holding the fort.

Horned Larks, a few in number, confined their feeding-ground to roads, walking along the sleigh-tracks and hopping in and out of the hoof-marks.

Crows, Blue Jays, a single Goldfinch, several White-breasted Nuthatches, and a Golden-crowned Kinglet were also observed, and in spite of nature's food-supply, it is apparent in these extreme winters that the birds depend at least to some extent upon the farmers for their existence. Besides the buckwheat for the Snowflakes, Quail and Grouse, the man with whom we stopped

hangs out on a tree near the house two or three meat bones, which are a perfect feast for Nuthatches, Downy Woodpeckers and Chickadees, and judging from the time they spent working at these bones, it seemed their entire food was thus obtained. At one time a Chickadee monopolized one bone, a Downy another, and a Nuthatch sat on the fence close by for half an hour waiting his turn. Every day the birds tugged at these bones, and the supply was kept up as long as the cold weather lasted. Many a farmer and his family, it was said, pay similar attention to the birds in winter.

On another visit to Mt. Pocono, November 26, 1903, there had been considerable cold weather, and on this day the thermometer was down to 6°, a stiff breeze blowing, and the ice on the lake six inches thick. But on a birch tree over an open pool, just below the falls, sat a Kingfisher, watching his chance for innocent trout. On the following March 25th, before the snow and ice had disappeared, there sat the Kingfisher on almost the same branch as though he had been there all winter.

On a tree close to the house, I watched at close range a Nuthatch pick up a chestnut from the ground, carry it a few feet up the trunk of a chestnut tree, deliberately jam it in behind a projecting piece of bark and then hammer away at it until he had opened it, when little by little he devoured the contents; if it became loose he would pick it up and give it another jam. Once when he dropped it, he walked all the way down the trunk out onto the ground and back up the tree to repeat the operation. All the while I was standing within a few feet of him.

On November 24 and 25, 1906, there was no snow on the ground, but there had been ten inches earlier in the month, and almost zero weather. It was cold and windy, and to my surprise a Ruby-crowned Kinglet hopped out on the edge of a hemlock but a few feet in front of me, showed me his crown, and sounded his double chat.

Blue Jays were most numerous, more than I ever saw before at Mt. Pocono, and they were seen eating chestnuts, cracking them and devouring them on the ground.

As I walked past Wiscasset Pool, a Barred Owl, the first I had seen since 1883, peered at me from a maple branch over-

hanging the water, no doubt watching for a fish, for fifteen minutes later on Minausins Lake, a half-mile further up stream, I saw another one on a limb overhanging the water. As I approached he quickly vacated, and in a few moments had, with the aid of the wind, disappeared away over the top of Deer Mountains, getting away as though he never intended to return. A couple of hours later, near the head of Spruce Run, a Great Horned Owl flew out over my head from one of the large hemlocks, which grow in this dark and beautiful glen. I had heard one of these birds in August last not far from the same spot.

American Crossbills, Purple Finches and Field Sparrows, and a great many Juncos were noted; but flocks of Pine Grosbeaks attracted my attention most of all, and my short experience with them alone, made the trip quite worth while. First a single bird flew over my head, singing as he disappeared in the wood. For the next hour or so I would hear them every few minutes uttering a little note much like the Purple Finch but not so loud. Occasionally they would sing, with a single loud whistle followed by a short warble of the quality of a Purple Finch. They flew very much like a Robin, and when I imitated the song, three in drab plumage at once flew down to a small leafless birch and sat within six feet of me right out in the open. For several minutes they looked me over, uttering their little "tut tut," as though quietly talking to one another; then, exactly as the Purple Finches do, after a rather vigorous "tutting," they took wing and joined their companions among the pitch-pines. We were told that the Pine Grosbeak is common in winter, but like the Crossbill is erratic, and some years altogether absent.

I also saw what I took to be a Goshawk and a Pigeon Hawk, the latter I have seen a number of times in the fall and summer in the same locality.

Since so few visits are made to this and similar mountain regions in winter, it is probable that there is much to be learned regarding the endurance of certain birds and their sources of food, as well the effect of deep snow and failure of food-supply upon migration. These notes are offered as a suggestion of what will repay investigation upon these lines.

Report of the Spring Migration of 1906

COMPILED BY WITMER STONE

The work of the "Migration Corps" who coöperate with the Club in collecting data upon the arrival and departure of birds in the Delaware Valley and elsewhere in Pennsylvania and New Jersey cannot be too highly praised. It is doubtful if such an accurate and comprehensive series of data has ever been collected over such a limited area anywhere in America, and the ultimate results of the work will prove of great scientific value. We can only congratulate our observers and urge their continuance in the work as well as the solicitation of aid from others competent to keep the necessary records.* Schedules covering the 1906 migration were received from the following:

New Jersey.

Cape May, H. Walker Hand.

Downstown (near Newfield), W. W. Fair.

Yardville, Rachel E. Allison.

Trenton, C. C. and R. M. Abbott.

Bordentown, Minnie V. Flynn.

Beverly, J. Fletcher Street.

Burlington, Helen F. Carter.

Moorestown, Anna A. Mickle.

Moorestown, Wm. B. Evans and Dr. S. S. Haines.

Pensauken, C. J. Hunt.

Haddonfield, Mrs. E. Tomlinson Gill.

Pennsylvania.

Kennett Square, Charles J. Pennock.

Concordville, Mrs. K. R. Styer.

Westtown, Edith Smedley, Emily T. Webster, etc.

* Applications for blank schedules and for information should be addressed to Mr. Samuel C. Palmer, Swarthmore, Delaware Co., Pa., who superintends this branch of the Club's work.

Swarthmore, Samuel C. Palmer.
Swarthmore, George S. Roberts.
Swarthmore, N. W. Swayne.
Swarthmore, Jos. S. Webb.
Lansdowne, John D. Carter.
Lansdowne, Louisa M. Jacob.
Lansdowne, Aldrich J. Pennock.
Lansdowne, Anna D. White.
Lansdowne, Friends' School.
Lansdowne, W. R. White.
Lansdowne, J. Harold Austin and Ethel A. Shrigley.
Collingdale, Paul L. Lorrilliere.
Morton, Dr. J. F. Prendergast.
Media, Lydia G. Allen.
Media, Philip H. Moore.
Media, Alice Fussell.
Media, Ellen Fussell.
Media, Edith L. Palmer.
Ardmore, Wm. L. Baily.
Haverford, W. J. Serrill.
Haverford, M. Albert Linton.
Haverford, Thos. C. Desmond.
Haverford, R. A. Spaeth.
Wayne, A. C. Redfield.
Bryn Mawr, Miss Emily H. Thomas.
Wissahickon, John R. Pickering.
Olney, George S. Morris.
Oak Lane, Richard C. Harlow.
Frankford, Richard F. Miller.
Bristol, Thomas D. Keim.
Woodbourne, Edward Pickering, Jr.
George School, Students.
George School, Wm. E. Roberts.
George School, Jesse Packer.
Marietta, W. H. Buller.
Lopez, Otto Behr.

Summaries of observations on four prominent species show the following results:

Chimney Swift.

- April 8. Media.
 April 11. Kennett Square.
 April 12. Haverford and Rad-
 nor.
 April 14. Moorestown and Pen-
 sauken.
 April 15. Tacony.
 April 17. Frankford.
 April 18. Four stations.
 April 19. Four stations.
 April 20. Six stations.
 April 21. Six stations.

Ovenbird.

- April 28. Four stations.
 April 29. Eleven stations.
 April 30. Four stations.
 May 1. Four stations.
 May 2. Six stations.

Scarlet Tanager.

- April 25. Oak Lane.
 May 1. Five stations.
 May 2. One station.
 May 3. Eight stations.
 May 4. Two stations.
 May 5. Eight stations.

Wood Thrush.

- April 25. Frankford.
 April 28. Four stations.
 April 29. Eleven stations.
 April 30. Five stations.
 May 1. Eight stations.

Making comparisons for the past four years on this plan, we get the following interesting results; the dates in parentheses indicating the arrival of the earliest straggler, the other dates the time of bulk arrival.

Chimney Swift.

- 1903 (April 12), April 19-20.
 1904 (April 15), April 24-25.
 1905 (April 13), April 20-21.
 1906 (April 8), April 18-21.

Ovenbird.

- 1903 (April 27), April 29-30.
 1904 (April 22), April 30-
 May 1.
 1905 (April 25), April 29-30.
 1906 (April 28), April 29-
 May 2.

Scarlet Tanager.

- 1903 (April 25), May 6.
 1904 (April 30), May 6.
 1905 (April 21), May 3-7.
 1906 (April 25), May 1-5.

Wood Thrush.

- 1903 (April 23), April 30-
 May 2.
 1904 (April 22), April 29-
 May 1.
 1905 (April 23), April 28-30.
 1906 (April 25), April 28-
 May 1.

The tables of spring arrivals follow.

NAME.	Moorestown, N. J.	N. 1; E. 12.1	Pensaiken, N. J.	N. 0; E. 8.	Haddonfield, N. J.	S. 4; E. 7.	Media, Pa.	S. 2; W. 12.	Swarthmore, Pa.	S. 3; W. 10.	Collingdale, Pa.	S. 3; W. 6.	Lansdowne, Pa.	S. 1; W. 6.	Morton, Pa.	S. 2; W. 8.	Ardmore, Pa.	N. 3; W. 7.	Haverford, Pa.	N. 4; W. 8.	Bryn Mawr, Pa.	N. 4; W. 9.	Radnor, Pa.	N. 6; W. 11.	(Germantown, Phila.)	N. 6; W. 1.	Oak Lane, Phila.	N. 7; E. 2.	Frankford, Phila.	N. 5; E. 5.	Olney, Phila.	N. 6; E. 3.
Canada Goose	Apr. 14	.....	.....	.....	.....	May 1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	May 8	.....	.....	.....	.....	.....	.....	.....	.....	Feb. 25	Feb. 8	Mar. 5	.....
Green Heron	May 1	May 5	.....	.....	.....	May 4	May 6	.....	.....	.....	.....	Apr. 30	.....	.....	.....	.....	.....	May 6	Apr. 13	.....	.....	.....	.....	.....	.....	.....	Apr. 22	.....	May 7	.....
Night Heron	Apr. 8	Apr. 22	.....	.....	.....	May 8	Mar. 24	.....	.....	.....	.....	Apr. 29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 17	Apr. 20	.....	.....
Spotted Sandpiper	Apr. 16	Apr. 29	.....	.....	.....	Apr. 25	Apr. 19	.....	.....	.....	.....	May 5	.....	.....	.....	.....	.....	May 5	Apr. 20	.....	.....	.....	.....	.....	.....	.....	Apr. 21	Apr. 25	Apr. 18	.....
Solitary Sandpiper	May 8	May 10	.....	.....	.....	.....	May 13	.....	.....	.....	.....	.....	.....	Apr. 20	.....	.....	.....	.....	.....	.....	.....	Apr. 30	May 12	May 10	.....
Killdeer	Mar. 25	Mar. 11	Mar. 5	.....	.....	.....	Mar. 9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mar. 27	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mar. 17	.....
Dove	Apr. 15	Apr. 25	.....	.....	Mar. 18	Apr. 17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mar. 24	Feb. 23	Feb. 25	.....
Osprey	Apr. 13	Apr. 14	.....	.....	Apr. 26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 13	Apr. 7	.....	.....
Turkey Vulture	Mar. 25	.....	.....	.....	Apr. 29	Jan. 1	Feb. 3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 6	Apr. 12	.....	.....
Yellow-billed Cuckoo	May 20	May 4	May 23	.....	May 5	May 13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	May 3	May 12	.....	.....
Black-billed Cuckoo	May 17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kingfisher
Yellow-bellied Sapsucker
Red-headed Woodpecker
Flicker
Whip-poor-will
Nighthawk
Chimney Swift
Hummingbird
Kingbird
Crested Flycatcher
Phoebe

¹ The relative positions of the stations are indicated by the number of miles. N. or S. and E. or W., that each one is distant from Philadelphia — i. e., its latitude and longitude with reference to the City Hall.

² Resident.

NAME.	Moorstown, N. J.	Pensaiken, N. J.	Hadonfeld, N. J.	Media, Pa.	Swarthmore, Pa.	Collingdale, Pa.	Lansdowne, Pa.	Morton, Pa.	Ardmore, Pa.	Haverford, Pa.	Bryn Mawr, Pa.	Radnor, Pa.	Germantown, Phila.	Oak Lane, Phila.	Frankford, Phila.	Olney, Phila.
Wood Pewee	May 6	May 5	May 25	May 5	May 5	May 9	May 6	.....	May 1	Apr. 30	.....	May 19	.....	May 8	May 15	.....
Acadian Flycatcher ..	.....	.....	.....	May 16	.....	.....	May 3	.....	May 6	Apr. 28	.....	May 30	.....	May 12	May 10	.....
Least Flycatcher .....	.....	.....	.....	May 6	May 16	.....	May 3	.....	.....	.....	.....	May 6	.....	May 16	May 17	.....
Bobolink	May 3	.....	.....	Apr. 14	.....	.....	.....	May 3	May 6	May 2	.....	May 12	.....	May 1	May 16	.....
Cowbird .....	.....	.....	.....	Mar. 29	Mar. 28	.....	Apr. 10	.....	Apr. 18	Mar. 25	.....	Mar. 30	.....	Mar. 27	Apr. 4	.....
Red-winged Blackbird ..	Feb. 4	Feb. 24	Mar. 12	Mar. 7	Feb. 23	Jan. 20	Mar. 28	Mar. 1	Apr. 4	Mar. 10	.....	Feb. 23	.....	Feb. 23	Mar. 27	.....
Meadow Lark .....	.....	Feb. 25	Mar. 7	Res.	Feb. 10	Jan. 7	Mar. 4	Feb. 24	Feb. 21	Mar. 12	Apr. 7	Feb. 4	.....	Jan. 1	Jan. 16	.....
Orchard Oriole	May 2	May 5	May 5	May 5	.....	.....	May 8	May 4	May 6	May 1	.....	May 19	.....	May 3	May 3	.....
Baltimore Oriole	May 3	May 5	.....	Apr. 30	May 6	May 6	May 5	May 3	May 3	May 3	Mar. 14	May 2	.....	May 1	May 1	.....
Rusty Blackbird	Apr. 29	.....	.....	Apr. 25	.....	Jan. 6	.....	.....	Apr. 29	.....	.....	.....	.....	Mar. 19	Apr. 4	.....
Purple Grackle	Feb. 15	Feb. 24	Jan. 23	Jan. 22	Feb. 20	Feb. 21	Feb. 22	Feb. 22	Feb. 21	Feb. 21	Feb. 23	Jan. 23	Feb. 22	Feb. 19	Feb. 23	Feb. 21
Vesper Sparrow	Apr. 8	Feb. 25	May 8	Apr. 8	.....	Apr. 8	.....	.....	Apr. 11	Apr. 7	.....	Apr. 22	.....	Apr. 7	Apr. 1	.....
Savanna Sparrow	Apr. 30	.....	.....	Apr. 29	May 13	.....	.....	.....	May 6	May 6	.....	Mar. 29	.....	Mar. 18	May 10	.....
Grasshopper Sparrow ..	Apr. 6	Mar. 25	Apr. 27	Apr. 5	Apr. 8	Apr. 1	Mar. 25	Apr. 6	Apr. 5	Apr. 5	Apr. 10	Apr. 13	Apr. 18	Apr. 25	Apr. 30	.....
Chipping Sparrow	Apr. 8	Feb. 25	Apr. 29	Mar. 11	Apr. 7	Feb. 12	Feb. 26	Feb. 23	Mar. 22	Mar. 31	Mar. 30	Apr. 1	Apr. 11	Mar. 31	Jan. 2	.....
Field Sparrow	May 1	Apr. 22	.....	Apr. 13	.....	Jan. 6	.....	.....	Apr. 14	Apr. 13	.....	.....	.....	Apr. 1	Apr. 23	.....
Swamp Sparrow	Mar. 25	Mar. 18	.....	Mar. 7	Feb. 22	.....	Feb. 22	.....	Mar. 11	Feb. 22	Feb. 23	Feb. 22	Mar. 25	Feb. 20	Mar. 1	Feb. 24
Fox Sparrow	Apr. 21	Apr. 15	May 8	Apr. 15	Apr. 21	Apr. 21	Apr. 15	Apr. 25	Apr. 22	Apr. 19	Nar. 6	Apr. 12	Apr. 27	Apr. 7	Apr. 30	.....
Cbewink .....	.....	.....	.....	May 6	May 3	.....	Apr. 30	.....	May 4	May 3	May 10	May 5	.....	May 6	May 7	.....
Rose-breasted Grosbeak ..	May 10	May 19	.....	May 4	May 3	.....	May 5	.....	May 6	May 2	May 3	May 5	May 5	May 10	May 5	.....
Indigobird	May 10	May 12	.....	May 1	May 1	.....	May 1	.....	May 3	May 1	May 7	May 5	May 5	Apr. 25	May 5	.....
Scarlet Tanager	Apr. 9	.....	.....	Apr. 30	Apr. 23	.....	.....	.....	.....	Jun. 1	.....	.....	.....	Apr. 19	Apr. 13	.....
Purple Martin .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

T = Tinicum, Delaware Co., Pa.

NAME.	Moorestown, N. J.	Pensauken, N. J.	Haddonfield, N. J.	Media, Pa.	Swarthmore, Pa.	Collingdale, Pa.	Lansdowne, Pa.	Morton, Pa.	Ardmore, Pa.	Haverford, Pa.	Bryn Mawr, Pa.	Radnor, Pa.	Germantown, Phila.	Oak Lane, Phila.	Frankford, Phila.	Olney, Pa.
Cliff Swallow .....	.....	Apr. 14	Apr. 25	.....	.....	.....	May 3	.....	Apr. 17	.....	.....	.....	.....	Apr. 29	May 10	.....
Barn Swallow	Apr. 21	.....	.....	Apr. 25	Apr. 13	.....	Apr. 28	Apr. 17	Apr. 22	Apr. 19	.....	Apr. 22	.....	Apr. 12	Apr. 11	.....
Tree Swallow	May 1	Apr. 14	.....	Apr. 19	Apr. 13	.....	May 5	.....	.....	Apr. 11	.....	Apr. 22	.....	Apr. 20	May 3	.....
Bank Swallow .....	.....	.....	.....	Apr. 16	Apr. 13	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 28	Apr. 11	.....
Rough-winged Swallow .....	.....	.....	.....	Apr. 15	Apr. 13	.....	.....	.....	Apr. 14	Apr. 12	.....	Apr. 14	.....	Apr. 28	Apr. 13	.....
Cedar Bird	Mar. 16	.....	.....	Mar. 24	Apr. 13	.....	.....	.....	May 26	Mr. 15	Mar. 30	May 30	.....	Feb. 13	Apr. 20	.....
Red-eyed Vireo	May 3	May 5	May 2	Apr. 29	May 4	May 6	May 3	May 4	May 5	Apr. 27	May 7	May 5	May 4	May 1	May 5	.....
Warbling Vireo	May 3	.....	.....	May 4	.....	.....	.....	.....	May 6	Apr. 30	.....	May 7	.....	May 5	May 10	.....
Yellow-throated Vireo	Apr. 30	.....	.....	May 13	May 5	.....	Apr. 29	.....	May 1	Apr. 25	.....	May 2	.....	May 6	.....	.....
Solitary Vireo .....	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 29	May 3	.....	.....	.....	Apr. 29	Apr. 28	.....
White-eyed Vireo	May 1	Apr. 29	.....	May 2	May 11	May 4	May 3	.....	May 6	Apr. 25	.....	May 5	.....	May 10	May 4	.....
Black and White Warbler	Apr. 21	Apr. 29	.....	Apr. 19	Apr. 19	.....	Apr. 20	May 1	Apr. 22	Apr. 22	Apr. 27	May 11	.....	Apr. 29	Apr. 30	.....
Worm-eating Warbler .....	.....	.....	.....	May 6	May 6	.....	.....	.....	May 6	Apr. 29	.....	May 6	May 13	.....	May 1	.....
Blue-winged Warbler .....	.....	.....	.....	May 1	May 4	.....	May 3	.....	May 5	May 3	.....	Apr. 28	.....	May 2	Apr. 30	.....
Parula Warbler	May 6	May 5	.....	May 5	May 13	.....	May 1	.....	May 6	Apr. 29	May 7	May 6	.....	May 12	.....	.....
Yellow Warbler	Apr. 29	Apr. 22	May 2	Apr. 28	May 4	May 2	Apr. 30	May 3	May 6	Apr. 24	.....	May 7	.....	May 1	Apr. 30	.....
Black-throated Blue Warbler	May 6	.....	.....	May 3	Apr. 29	.....	May 3	.....	May 1	Apr. 30	May 3	May 5	.....	May 12	May 12	.....
Myrtle Warbler	Apr. 29	Apr. 29	.....	Apr. 8	Apr. 28	.....	Apr. 25	.....	Apr. 28	Apr. 15	May 3	Apr. 22	.....	Apr. 17	Apr. 28	.....
Magnolia Warbler	May 15	.....	.....	May 13	May 13	.....	May 2	.....	May 6	May 1	May 7	May 12	.....	May 12	May 12	.....
Chestnut-sided Warbler	May 6	.....	.....	May 1	May 13	.....	May 3	.....	May 6	May 3	Apr. 27	May 3	.....	May 10	May 10	.....
Black-poll Warbler	May 6	.....	.....	May 4	.....	.....	May 12	.....	May 6	May 6	May 7	May 5	.....	May 14	.....	.....
Blackburnian Warbler	May 10	.....	.....	May 3	May 13	.....	May 14	.....	May 13	May 3	May 14	May 12	.....	May 3	May 12	.....
Black-throated Green Warbler .....	.....	May 12	.....	Apr. 30	May 13	.....	Apr. 29	.....	May 1	Apr. 30	Apr. 27	May 12	.....	May 16	Apr. 30	.....

* Jan. 28.

* Res.

Name.	Moorestown, N. J.	Pensauken, N. J.	Haddonfield, N. J.	Media, Pa.	Swarthmore, Pa.	Collingsdale, Pa.	Lansdowne, Pa.	Morton, Pa.	Ardmore, Pa.	Haverford, Pa.	Bryn Mawr, Pa.	Radnor, Pa.	Germanstown, Phila.	Oak Lane, Phila.	Frankford, Phila.	Olney, Phila.
Pine Warbler	Apr. 21	.....	May 8	Apr. 8	May 6	Apr. 13	Apr. 13	.....	Apr. 14	Apr. 14	Apr. 24	Apr. 14	Apr. 13	Apr. 13	Apr. 13	Apr. 13
Yellow Palm Warbler	May 5	May 20	.....	Apr. 29	Apr. 28	Apr. 30	Apr. 30	.....	Apr. 29	Apr. 29	May 3	May 2	Apr. 29	Apr. 28	May 1	May 17
Prairie Warbler	Apr. 29	Apr. 29	May 8	Apr. 26	May 10	Apr. 29	Apr. 30	.....	May 6	Apr. 6	Apr. 30	May 5	May 5	May 5	May 8	May 1
Water Thrush	May 3	.....	.....	May 5	May 2	Apr. 30	Apr. 30	.....	May 6	May 6	May 1	May 5	May 11	May 3	May 3	May 3
Kentucky Warbler	.....	.....	.....	Apr. 21	May 1	Apr. 30	Apr. 27	.....	May 5	May 5	May 3	Apr. 29	May 5	May 3	May 15	May 15
Maryland Yellow-throat	Apr. 22	Apr. 29	May 8	May 4	Apr. 22	May 4	May 5	.....	May 6	May 6	May 5	May 5	May 13	Apr. 27	May 3	May 3
Chat	.....	May 5	.....	May 6	May 9	.....	May 12	.....	May 13	May 13	May 10	May 12	May 18	May 3	May 3	May 3
Canada Warbler	.....	.....	.....	Apr. 29	May 4	.....	Apr. 29	.....	Apr. 29	Apr. 29	May 3	May 6	.....	Apr. 29	May 3	May 3
Redstart	Apr. 29	.....	.....	May 1	May 4	Apr. 29	Apr. 27	May 3	Apr. 28	May 1	Apr. 27	Apr. 29	Apr. 29	Apr. 24	May 3	May 3
Gabird	May 1	May 4	May 2	Apr. 16	Apr. 21	Apr. 21	Apr. 22	Apr. 28	Apr. 19	Apr. 17	Apr. 10	Apr. 19	.....	Mar. 9	Apr. 20	Apr. 20
Brown Thrasher	Apr. 21	Apr. 22	May 8	Apr. 22	May 4	Apr. 21	Apr. 25	Apr. 29	Apr. 29	Apr. 25	Apr. 27	Apr. 22	.....	Apr. 18	May 3	May 3
House Wren	Apr. 22	May 4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Long-bill'd Marsh Wren	.....	May 4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ruby-crowned Kinglet	Apr. 19	.....	.....	Apr. 8	Apr. 19	.....	Apr. 15	.....	Apr. 14	Apr. 14	7 Apr.	7 Apr. 13	.....	Apr. 7	Apr. 10	Apr. 10
Wood Thrush	Apr. 29	Apr. 29	.....	Apr. 28	Apr. 29	Apr. 29	Apr. 29	May 1	Apr. 29	Apr. 29	29 Apr. 30	May 3	May 1	Apr. 28	Apr. 25	Apr. 25
Wilson's Thrush	May 6	May 5	.....	May 6	Apr. 29	.....	Mar. 3	.....	May 4	Apr. 4	29 May 3	Apr. 30	.....	Apr. 28	Apr. 27	Apr. 27
Gray-cheeked Thrush	.....	.....	.....	.....	.....	.....	May 17	.....	May 16	May 16	4 May 11	Mar. 19	.....	May 15	May 15	May 15
Olive-backed Thrush	May 3	.....	.....	May 6	.....	.....	May 8	.....	May 16	May 16	13 Apr. 11	Mar. 19	.....	May 16	May 4	May 4
Hermit Thrush	Apr. 13	Apr. 29	.....	Apr. 8	Apr. 19	Apr. 12	Apr. 12	.....	Apr. 14	Apr. 14	13 Apr. 11	Mar. 19	.....	May 16	May 4	May 4
Robin	Jan. 21	Feb. 4	Feb. 17	Feb. 20	Feb. 22	Jan. 21	Feb. 20	Feb. 23	Feb. 21	Feb. 21	13 Apr. 11	Mar. 19	.....	May 16	May 4	May 4
Bluebird	Feb. 23	Feb. 24	Mar. 7	Feb. 22	Feb. 22	Feb. 23	Feb. 19	Feb. 23	Feb. 20	Feb. 20	22 Feb. 23	Res.	.....	Feb. 1	Feb. 23	Feb. 16

* Also on Feb. 22.

NAMES.

Flicker
 Whip-poor-will
 Nighthawk.....
 Chimney Swift.....
 Hummingbird
 Kingbird
 Crested Flycatcher.....
 Phoebe
 Bobolink
 Cowbird
 Red-winged Blackbird
 Baltimore Oriole
 Purple Grackle
 Chipping Sparrow
 Chewink
 Indigobird
 Scarlet Tanager
 Purple Martin
 Barn Swallow
 Red-eyed Vireo
 Black and White Warbler....
 Chestnut-sided Warbler.....
 Ovenbird
 Maryland Yellow-throat.....
 Chat
 Catbird
 Brown Thrasher
 House Wren.....
 Wood Thrush
 Hermit Thrush
 Robin
 Bluebird



NAMES.	Cape May, N. J. E. 13; S. 72.	Downstown, N. J. E. 11; S. 28.	Kennett Square, Pa. W. 30; S. 8.	Concordville, Pa. W. 20; S. 6.	Westtown, Pa. W. 21; S. 2.	Beverly, N. J. E. 13; N. 8.	Burlington, N. J. E. 15; N. 9.	Berks, Pa. E. 17; N. 10.	Bordentown, N. J. E. 20; N. 13.	Yardville, N. J. E. 23; N. 16.	Trenton, N. J. E. 23; N. 16.	Woodbourne, Pa. E. 15; N. 17.	George School, Pa. E. 11; N. 18.	Marietta, Pa. W. 74; N. 7.	Lopez, Pa. W. 60; N. 103.
Flicker	Res. Apr. 5	Apr. 1	Feb. 11	Apr. 6	Feb. 25	Mar. 4	Mar. 29	Jan. 19	R	R	Mar. 5	R	Apr. 14		
Whip-poor-will	Apr. 21	Apr. 18						Apr. 20	Apr. 20		Apr. 29	Apr. 15	Apr. 29		
Nighthawk	May 6							May 10	May 18		May 20	Apr. 24			
Hummingbird	Apr. 26	Apr. 11	Apr. 20	Apr. 21	Apr. 18	Apr. 24	Apr. 21	Apr. 19	Apr. 29	Apr. 22	Apr. 18	Apr. 18	May 3		
Kingbird	May 16	May 14						May 13	May 16	May 13	May 14		May 24		
Crested Flycatcher	May 5	May 1	Apr. 30	Apr. 27				May 18	Apr. 29	Apr. 20	Apr. 22	May 7	May 1		
Phoebe	May 5	May 1	May 2	May 5	May 1			May 1	May 6	May 5	May 3	May 3	May 6		
Bobolink	Apr. 5	Apr. 3	Apr. 4	Apr. 6	Apr. 10	Apr. 8	Apr. 5	Apr. 7	Apr. 7	Apr. 4	Apr. 2	Apr. 30	Apr. 4		
Cowbird		May 11	May 4					May 1		May 18	May 1	May 2	May 2		
Red-winged Blackbird	Feb. 22	Mar. 18	Feb. 24	Feb. 22	Feb. 25	Mar. 18	May 4	Feb. 25	Mar. 29	Apr. 14	Feb. 24	Feb. 24	Mar. 4		
Baltimore Oriole	May 5	May 1	Apr. 30	May 3		Apr. 30	Apr. 27	May 6		May 17	May 5	May 6	May 1		
Purple Grackle	Feb. 22	Feb. 9	Feb. 20	Feb. 20	Feb. 21	Feb. 23	Feb. 24	Feb. 23	Mar. 2	Feb. 21	Feb. 10	Feb. 24	Mar. 4		
Chipping Sparrow	Mar. 21	Apr. 4	Apr. 5	Apr. 5	Apr. 6	Apr. 6	Apr. 1	Apr. 3	Apr. 3	Apr. 5	Apr. 14	Apr. 8	Apr. 5		
Chewink	Apr. 3	Mar. 23		Apr. 19	Apr. 16	Apr. 20	Apr. 22	Apr. 29	Apr. 19	Apr. 29	Apr. 22	Apr. 21	Apr. 25		
Indigobird		May 4	May 1	May 4	May 13			May 6	May 11	May 12	May 6	May 5	May 12		
Scarlet Tanager		May 14	May 12	May 4	May 2			May 6	May 13	May 6	May 14	May 14	May 12		
Purple Martin	Apr. 1	Apr. 17	Apr. 18					Apr. 8		Apr. 22		Apr. 21	May 4		
Barn Swallow	Apr. 20	May 10	Apr. 12					May 1	Apr. 29	Apr. 20	Apr. 28	Apr. 22	Apr. 11		
Red-eyed Vireo	May 6		May 5		May 1	May 3	May 6	May 2	May 1	May 1		May 2	May 12		
Black and White Warbler	Apr. 22	Apr. 29	May 4	Apr. 25	Apr. 22	Apr. 22	Apr. 29	Apr. 25	May 3	Apr. 29		Apr. 21			
Chestnut-sided Warbler		May 12	May 3	May 1		May 4	May 10		May 10	May 22		May 3	May 5		
Ovenbird	May 2	May 2	Apr. 28	Apr. 29		May 4	Apr. 29		May 3	Apr. 29	Apr. 27	Apr. 26	May 4		
Maryland Yellow-throat	Apr. 27	May 2	Apr. 28	Apr. 29	Apr. 29	May 10	Apr. 29	Apr. 29	Apr. 30	Apr. 23	May 6	Apr. 28	May 6		
Chat	May 5	May 13		May 6		May 6	May 13	May 1	May 17	May 4	May 11	May 6	May 4		
Catbird	Apr. 21	May 3	Apr. 29	Apr. 29	Apr. 29	May 3	May 1	Apr. 30	May 2	Apr. 30	May 3	Apr. 29	Apr. 24		
Brown Thrasher	Apr. 21	Apr. 22	Apr. 15	Apr. 19	Apr. 25	Apr. 22	Apr. 27	Apr. 29	Apr. 21	Apr. 30	Apr. 16	Apr. 20	Apr. 16		
House Wren	May 5	Apr. 22	Apr. 20	Apr. 21		May 11	May 6	Apr. 29	May 4	Apr. 30		Apr. 29	Apr. 15		
Wood Thrush		May 4	May 2	May 4	Apr. 29	May 4	May 2	May 15	Apr. 28	May 6	May 1	May 6	Apr. 30		
Hermit Thrush		Apr. 13	Apr. 10	Apr. 13	Apr. 22	Apr. 19		Apr. 13		May 4	Apr. 8	Apr. 13	Apr. 1		
Robin	Feb. 20	Feb. 13	Feb. 10	Jan. 19	Feb. 15	Feb. 23	Feb. 18	R	Jan. 18	R	Feb. 12	Feb. 17	Feb. 26		
Bluebird	R	Feb. 13	R	Feb. 14	Feb. 25	Feb. 25	Feb. 22	Feb. 18	R	R	R	Feb. 11	Feb. 23		

¹Midway between Trenton and Bordentown

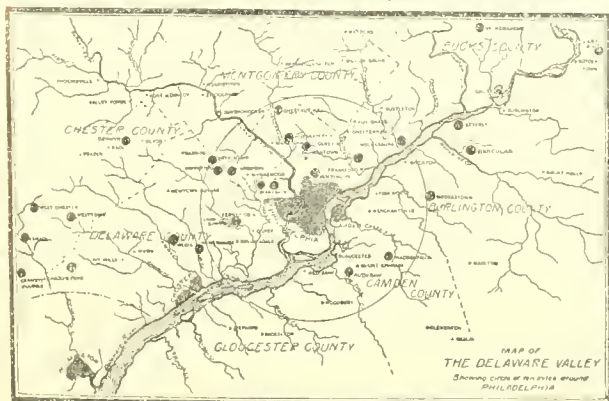


TABLE II.

SPRING MIGRATION 1908

EARLIEST DATES OF ARRIVAL OF THIRTY-TWO SPECIES AT FIFTEEN STATIONS OUTSIDE THE PHILADELPHIA CIRCLE

*List of Other Species Reported by Observers During 1906, and
Additional Notes. Winter Notes Relate to Winter of
1905-6. Localities are in Pennsylvania
Unless Otherwise Indicated.*

Pied-billed Grebe, *Podilymbus podiceps*. Two seen at Beverly, N. J., April 9 to 16 (*Street*). A pair off Petty's Island April 16 (*Miller*).

Herring Gull, *Larus argentatus*. Wintered on the coast and on the Delaware. Last seen at Bridesburg, April 30 (*Miller*), Bristol, March 4 (*Keim*).

Ring-billed Gull, *Larus delawarensis*. Two seen at Bridesburg, January 22 (*Miller*).

Black-headed Gull, *Larus atricilla*. Arrived Cape May, N. J., April 20 (*Hand*).

Gannet, *Sula bassana*. Cape May, N. J., Feb. 25 (*Hand*).

Cormorant, *Phalacrocorax dilophus*. Cape May, N. J., April 10 (*Hand*).

American Merganser, *Merganser americanus*. Wintered on East Park Reservoir, reported at Bridesburg, Jan. 27 (*Miller*), Cape May, N. J., April 4 (*Hand*). Three seen on Tacony Creek near Oak Lane, Feb. 10, and one shot, Oct. 17, 1905 (*Harlow*).

Red-breasted Merganser, *Merganser serrator*. Bridesburg, March 6 (*Miller*).

Hooded Merganser, *Lophodytes cucullatus*. Marietta, Feb. 24 (*Buller*), Bridesburg, March 2 (*Miller*).

Mallard, *Anas boschas*. One at Pensauken Creek, N. J., March 10 (*Hunt*).

Baldpate, *Mareca americana*. Marietta, Feb. 24 (*Buller*).

Blue-winged Teal, *Querquedula discors*. Richmond, about 200 flying northward, February 21 (*Miller*). One shot on Tacony Creek, Sept. 25, 1905 (*Harlow*).

Wood Duck, *Aix sponsa*. Pensauken Creek, N. J., April 27 (*Miller*).

Goldeneye Duck, *Clangula clangula*. Twenty seen on the Delaware at Bristol, February 18 (*Keim*), Wissinoming, March 27 (*Miller*).

Bufflehead, *Charitonetta albeola*. Bridesburg, January 27 (Miller).

Ruddy Duck, *Erismatura jamaicensis*. One shot April 10, Kennett Square (Pennock).

Canada Goose, *Branta canadensis*. Large flock passed over Cape May, N. J., going north, Feb. 19 (Hand). Several flocks passed over Zieglersville, Montgomery Co., Oct. 26, 1905. Last seen at Oak Lane, Dec. 13, 1905 (Harlow).

Brant, *Branta bernicla*. Very abundant during winter, 1905-06, at Beach Haven, N. J. (Harlow), Bridesburg, February 25 (Miller).

American Bittern, *Botaurus lentiginosus*. Media, April 22 (Moore), Trenton, N. J., April 19 (Abbott), Holmesburg, April 25 (Miller).

Least Bittern, *Ardetta exilis*. Richmond, May 2 (Miller).

Great Blue Heron, *Ardea herodias*. Wintered on Pensauken Creek, N. J. (Hunt), Tinicum, February 11 and April 19 (Carter), Moorestown, N. J., April 2 (Evans), Bristol, April 4 (Keim), Trenton, N. J., April 5 (Abbott), Haverford, April 26 (Spaeth), Wayne, April 29 (Redfield).

White Egret, *Herodias egretta*. Daily at Cape May, N. J., during Sept., 1905 (Hand).

Green Heron, *Butorides virescens*. Cape May, N. J., Nov. 11, 1905 (Hand).

Night Heron, *Nycticorax n. naevius*. Common at Zieglersville, Montgomery Co., up to Nov. 1, 1905 (Harlow).

King Rail, *Rallus elegans*. One caught at Kennett Square, April 14 (Pennock).

Clapper Rail, *Rallus ercpitans*. Two nests with eggs, Stone Harbor, N. J., May 27 (Carter).

Virginia Rail, *Rallus virginianus*. Media, April 21 (E. Fussell), Pensauken, N. J., May 20 (Harlow), Richmond, May 5 (Miller).

Florida Gallinule, *Gallinula galeata*. Richmond, May 13, nest and 12 eggs, May 22 (Miller).

Coot, *Fulica americana*. Richmond, May 7 (Miller).

Woodcock, *Philohela minor*. Three seen at Cape May, N. J., Feb. 28, and abundant from that date until March 21, seen

daily all over town, saw six in flight at one time. Two men who were out feeding quail saw "upwards of two hundred" in one afternoon. We have no record of such numbers at this time, though they are plentiful during fall migration (*Hand*). May 5, Winslow, N. J. (*Street*). Two on Pensauken Creek, May 27 (*Miller*). One March 18 and five April 1, Downtown, N. J. (*Fair*). Two near Tuckerton, March 17 (*Stone and Rehn*). Haverford, April 1 (*Scrill*), Lopez, April 7 (*Behr*). Seen at Oak Lane, August 7 and 14, 1905, and two November 4, 1905 (*Harlow*).

Wilson's Snipe, *Gallinago delicata*. Woodbourne, April 11 (*Pickering*), Richmond, April 23 (*Miller*).

Semipalmated Sandpiper, *Ereunetes pusillus*. Cape May, N. J., March 28, (*Hand*). Still numerous at Stone Harbor, N. J., May 27 (*Carter*), Pensauken, N. J., May 2 and 23, Richmond, May 22 (*Miller*).

Sanderling, *Calidris arenaria*. Cape May, N. J., March 28 (*Hand*).

Greater Yellowlegs, *Totanus melanoleucus*. One shot at Oak Lane, Oct. 18, 1905, and two Oct. 19 (*Harlow*).

Solitary Sandpiper, *Helodromus solitarius*. Last seen at Wayne, May 12 (*Redfield*), Frankford, May 22 (*Miller*).

Bartramian Sandpiper, *Bartramia longicauda*. George School, April 21, Moorestown, N. J., April 16 (*Evans*), Sandford, April 13 (*Miller*).

Hudsonian Curlew, *Numenius hudsonicus*. Cape May, N. J., April 29 (*Hand*). Flock at Stone Harbor, N. J., May 27 (*Carter*).

Black-bellied Plover, *Squatarola squatarola*. Cape May, N. J., April 29 (*Hand*). Flock at Stone Harbor, N. J., May 27 (*Carter*).

Killdeer Plover, *Oxyechus vociferus*. Atlantic City, N. J., Feb. 22 (*Morris*).

Semipalmated Plover, *Aegialitis semipalmata*. Pensauken Creek, N. J., May 13 (*Miller*). One at Stone Harbor, N. J., May 27 (*Carter*).

Turnstone, *Arenaria interpres*. Numerous at Stone Harbor, N. J., May 27 (*Carter*).

Bobwhite, *Colinus virginianus*. Holmesburg, May 25 (Miller), all winter at Downstown, N. J., but scarce (Fair).

Mourning Dove, *Zenaidura macroura*. Getting more plentiful, saw seventeen at one time during spring at Downstown, N. J. (Fair). All winter at Concordville (Styer), Olney, February 25 (Morris). Two nests with eggs, Pensauken, N. J. (Hunt).

Marsh Hawk, *Circus hudsonius*. Wintered plentifully on the Delaware Meadows, Tinicum (Harlow), Bridesburg, November 20 to March 8 (Miller). Seen at George School, April 21.

Sharp-shinned Hawk, *Accipiter velox*. Reported in winter at Bridesburg, Oak Lane and Tinicum.

Cooper's Hawk, *Accipiter cooperi*. Reported in winter at Oak Lane, Tinicum, Media and Bridesburg. Nest with eggs near Swarthmore, April 29 (Swayne).

Red-tailed Hawk, *Buteo borealis*. Winter resident at most stations. Last seen at Oak Lane, April 1 (Harlow). A pair nested on the Pennypack Creek above Foxchase in spring of 1905 (Harlow).

Red-shouldered Hawk, *Buteo lineatus*. Pretty generally reported in winter. Last seen at Oak Lane, April 8 (Harlow).

Broad-winged Hawk, *Buteo platypterus*. Oak Lane several times in September, 1905 (Harlow), Holmesburg, May 17 (Miller). Nest with eggs at Swarthmore, April 22 (Swayne), and at Kennett, May 20 (C. J. Pennock).

Bald Eagle, *Haliaeetus leucocephalus*. Lansdowne, April 8 (W. R. White).

Rough-legged Hawk, *Archibuteo lagopus sanctijohannis*. Bridesburg, Jan. 19 and 27 (Miller). Very scarce at Tinicum winter of 1905-6.

Sparrow Hawk, *Falco sparverius*. Generally resident.

Long-eared Owl, *Asio wilsonianus*. One shot at Oak Lane Nov. 18, 1905, and at Dreshertown, Mont. Co., Jan. 15 (Harlow). Jan. 17 two at Yardville, N. J., and remained all winter, one seen as late as May 26 (Allinson). Nest and eggs, Kennett Square, April 7 (C. J. Pennock).

Short-eared Owl, *Asio accipitrinus*. Several seen March 11 at Kennett Square (Penneock). Wintered on meadows at Bridesburg, November 20 to March 8, and one was shot at Harrow-

gate as early as October 9 (*Miller*). Wintered at Tinicum, and was heard calling on night of February 3 (*Harlow*).

Saw-whet Owl, *Cryptoglaux acadicus*. One captured at Oak Lane, Oct. 28, 1905.

Screech Owl, *Megascops asio*. Generally resident, had eggs at Crescentville, April 10 (*Miller*).

Snowy Owl, *Nyctea nyctea*. A pair seen at Cape May, N. J., and one of them captured November 26, 1905 (*Hand*). Two shot at Richmond, November 20, 1905, two at Magnolia, Camden Co., N. J., and one at Tinicum, November, 1905 (*Miller*).

Kingfisher, *Ceryle alcyon*. All winter on Pensauken Creek, N. J. (*Hunt*), and near Trenton, N. J. (*Abbott*), Moorestown, N. J., February 11 (*Evans*).

Downy Woodpecker, *Dryobates pubescens medianus*. Generally resident. Had eggs at Haverford, May 6 (*Desmond*), and at Pensauken, N. J., April 29 (*Miller*).

Hairy Woodpecker, *Dryobates villosus*. Common in winter at Oak Lane, one pair nested (*Harlow*), also reported in winter at Frankford and Media, at George School, March 10, Beverly, N. J., March 1. (*Street*), Haverford, April 27 and May 21.

Yellow-bellied Sapsucker, *Sphyrapicus varius*. One at Mt. Airy, Phila., March 11, which was probably there all winter (*Spaeth*). Wintered at Kennett Square (*C. J. Pennock*).

Red-headed Woodpecker, *Melanerpes erythrocephalus*. Very abundant about Oak Lane during 1905, several pairs nested (*Harlow*). Wintered at Wayne (*Redfield*) and Trenton (*Abbott*). One seen in Logan Square, Phila., during December, 1906 (*Stone*).

Flicker, *Colaptes auratus luteus*. Reported as wintering generally in small numbers at Cape May, N. J., Trenton, N. J., Swarthmore, Haverford, Frankford, Olney, Oak Lane, Wayne and Woodburne, and seen once during winter at Concordville, Yardville, N. J., Burlington, N. J. A single bird wintered at Marietta.

Yellow-bellied Flycatcher, *Empidonax flaviventris*. George School, May 10 (*Roberts*), Haverford, May 4 (*Desmond*).

Olive-sided Flycatcher, *Nuttallornis borealis*. Arrived at Lopez, June 3 (*Behr*).

Horned Lark, *Otocoris alpestris*. Flock of twelve near Princeton Junction, N. J., Feb. 15 (*Allinson*).

Blue Jay, *Cyanocitta cristata*. Reported during the winter at Haverford and sparingly at Oak Lane. Not seen at Frankford until March 2; Downstown, March 19; George School, March 3; Lansdowne, May 2. A pair were about Lansdowne after this date regularly (*A. J. Pennock*).

Crow, *Corvus brachyrhynchos*. Abundantly resident throughout the Delaware Valley. Had eggs, Frankford, April 11 (*Miller*), nest and young at Haverford, May 2 (*Spaeth*).

Fish Crow, *Corvus ossifragus*. Wintered sparingly at Oak Lane, also at Tinicum and Frankford.

Bobolink, *Dolichonyx oryzivorus*. Has become very scarce at Lopez, saw only one this year (*Behr*). One at Bridesburg, June 1, probably breeding near by (*Miller*). Male at Morton, June 12 but not seen later (*Prendergast*).

Cowbird, *Molothrus ater*. Three males at Frankford, Dec. 14, 1905 (*Miller*), and one seen during Dec., 1905, at Yardville, N. J. (*Allinson*).

Red-winged Blackbird, *Agelaius phoeniceus*. One at Tinicum, January 20 (*Lorrilliere*), and one at Moorestown, N. J., February 4 (*Evans*).

Meadowlark, *Sturnella magna*. Reported as resident at almost all stations near the Delaware river and at Kennett Square, sparingly so at Woodbourne, George School and Haverford. A few also wintered at Marietta.

Rusty Blackbird, *Euphagus carolinensis*. Saw small flocks at Tinicum throughout the winter until February 1 (*Lorrilliere* and *Harlow*). Two males at Ardmore all day April 29 (*Baily*).

Purple Grackle, *Quiscalus quiscula*. Several seen about Oak Lane until Jan. 1, seen also at Media on that date. A general flight occurred with the warm wave of January 23, and they were reported from Media, January 22, Haddonfield, N. J., Kennett, George School and Media, January 23, and at Yardville, N. J., and Woodbourne, January 31, and then none till the flight of February 21.

Purple Finch, *Carpodacus purpureus*. Arrived at Lopez, April 7 (*Behr*). Much scarcer than usual at Oak Lane (*Harlow*).

Goldfinch, *Astragalinus tristis*. Resident throughout the Delaware Valley and Southern New Jersey.

Snowflake, *Passerina nivalis*. Two on the Dyke, November 20, and a flock of 15, Richmond, March 17 (*Miller*). Feb. 11 flock at Yardville, N. J. (*Allinson*).

Vesper Sparrow, *Poæcetes gramineus*. Nest and four eggs, Pensauken, N. J., April 29 (*Hunt*).

Henslow's Sparrow, *Ammodramus henslowi*. Holmesburg, April 20 (*Miller*).

White-throated Sparrow, *Zonotrichia albicollis*. Last seen at Frankford, May 17 (*Miller*). Arrived at Media, Sept. 26, 1905 (*Allen*), last seen May 17 (*Moore*), Concordville, May 6 (*Styer*), Bristol, May 13 (*Keim*), Lansdowne, May 20 (*A. Pennock*), Haverford, May 18 (*Spaeth*), Oak Lane, May 20 (*Harlow*).

White-crowned Sparrow, *Zonotrichia leucophrys*. Frankford, May 14 (*Miller*).

Tree Sparrow, *Spizella monticola*. Last seen at Haverford, April 12 (*Desmond*), Wayne, April 10 (*Redfield*), Oak Lane, April 10 (*Harlow*), Downstown, N. J., April 9 (*Fair*), Frankford, April 18 (*Miller*).

Field Sparrow, *Spizella pusilla*. Nest and four eggs, Pensauken, N. J. (*Hunt*), Several at Oak Lane, December 25, 1905 (*Harlow*), and twelve at Tinicum, Feb. 12.

Junco, *Junco hyemalis*. Last seen at Wayne, April 22 (*Redfield*), Oak Lane, May 2 (*Harlow*), Downstown, N. J., April 15 (*Fair*), Burlington, N. J., April 20 (*H. F. Carter*), Frankford, April 25 and Pensauken, N. J., April 29 (*Miller*).

Song Sparrow, *Melospiza cinerea melodia*. Generally resident. Two nests, four and five eggs, April 29, Pensauken, N. J. (*Hunt*).

Swamp Sparrow, *Melospiza georgiana*. Common all winter at Tinicum (*Harlow*).

Fox Sparrow, *Passerella iliaca*. The great abundance of these birds during late February and March was a feature of the year's migration. Hundreds seen at Tuckerton, N. J., March 17 (*Stone and Rehn*). Last seen at Haverford, April 13 (*Desmond*), Wayne, April 14 (*Redfield*), Oak Lane, April 5 (*Harlow*).

Chewink, *Pipilo erythrophthalmus*. One at Trenton, N. J., all

winter (*Abbott*), seen at Tinicum, December 18, 1905, and January 20 (*Harlow*). Nest and four eggs, Lansdowne, May 19 (*Carter*).

Cardinal, *Cardinalis cardinalis*. Reported in winter at Frankford, Media, Haddonfield, Haverford and Lansdowne, reached George School, March 13. Had eggs at Torresdale, April 25, nest with three eggs Haverford, May 3, nest with three eggs Pensauken, N. J., April 22, hatched April 29 (*Hunt*).

Rose-breasted Grosbeak, *Zamelodia ludoviciana*. Unusually abundant migrant at Beverly, N. J. (*Street*).

Scarlet Tanager, *Piranga erythromelas*. Nested near Ithan, Pa.

Cedarbird, *Ampelis cedrorum*. Abundant at Cape May, N. J., March 19 to 24. They were all over town feeding on the berries of the honeysuckle on porches, fences, etc., and were very tame. Counted 52 in one flock (*Hand*). Flock of eight all winter at Haverford (*Spaeth*), and reported during the winter from Cape May, Haddonfield, N. J., Oak Lane, Kennett Square and Trenton, N. J.

Northern Shrike. *Lanius borealis*. Kennett Square, February 28 (*Pennock*), Ithan, Del. Co., Pa., February 18 (*Redfield*).

White-eyed Vireo, *Vireo noveboracensis*. Young three days old, Torresdale, June 5 (*Miller*).

Philadelphia Vireo, *Vireo philadelphicus*. Media, May 16 (*Moore*) bird watched for some time and compared with Chapman's Handbook in the field.

Black-and-White Warbler, *Mniotilta varia*. Several pairs nested at Clementon, N. J., one pair at Glenside, Pa. (*Harlow*).

Gold-winged Warbler, *Helminthophila chrysoptera*. Concordville, May 6 (*Styer*), Burlington, N. J., May 9 (*Carter*), Sandiford, May 3 (*Miller*).

Nashville Warbler, *Helminthophila rubricapilla*. Westtown, April 13 and earlier, Trenton, N. J., May 11 (*Abbott*).

Myrtle Warbler, *Dendroica coronata*. A flock Dec. 15, 1905, at Burlington, N. J. (*H. F. Carter*). A pair at Media, January 28 (*Fussell*).

Bay-breasted Warbler, *Dendroica castanea*. Moorestown, N. J., May 10 (*Mickle*), Media, May 16 (*Moore*), Lansdowne, May 14 (*A. Pennock*), Haverford, May 14, unusually abundant

this spring (*Linton*), Oak Lane, May 16 (*Harlow*), Moorestown, N. J., May 10 (*Mickle*), Bryn Mawr, May 15 and 23 (*Thomas*), about a dozen. Westtown, May 13.

Ovenbird, *Seiurus aurocapillus*. Eggs at Frankford, May 12, and young left nest at Torresdale, June 5 (*Miller*).

Kentucky Warbler, *Oporornis formosa*. Nest and five eggs at Oak Lane, May 26 (*Harlow*).

Connecticut Warbler, *Oporornis agilis*. One seen near Ardmore, May 13, by Baily and Serrill. "I had several good looks at it with binoculars at 25 feet. Could distinctly see the white eye-ring. Watched it for fifteen minutes in good light" (*Baily*).

Mourning Warbler, *Geothlypis philadelphia*. May 30, one male at Ardmore singing, "came to within ten feet of me" (*Baily*), Trenton, N. J., May 20 (*Abbott*).

Hooded Warbler, *Wilsonia mitrata*. Media, May 6 (*Moore*), Haverford, May 3 (*Spaeth* and *Linton*), Lansdowne, April 30, one singing (*Carter*). Three in full song May 20 at Clementon, N. J. (*Harlow*), Weymouth, N. J., May 7 (*Street*), George School, May 7 (*Roberts*), Frankford, May 15 (*Miller*).

Wilson's Warbler, *Wilsonia pusilla*. Haverford, May 13 (*Serrill*), Media, May 20 (*Allen*), May 13, Ardmore (*Baily*), Wayne, May 6-12 (*Redfield*).

Titlark, *Anthus pensilvanicus*. About 100 over the fields at Concordville for four successive days, May 4-7 (*Styer*).

Catbird, *Galeoscoptes carolinensis*. Eggs May 12 at Frankford (*Miller*).

Carolina Wren, *Thryothorus ludovicianus*. Reported as resident at Tinicum, Media, Lansdowne and Moorestown, N. J.

Long-billed Marsh Wren, *Telmatoodytes palustris*. Numerous nests at Tinicum Island, June 2, only one with eggs (*J. D. Carter*). Eggs at Richmond, May 22 (*Miller*).

Winter Wren, *Olbiorchilus hiemalis*. Last seen at Media, April 13 (*Moore*), Wayne, April 14 (*Redfield*), Oak Lane, May 8 (*Harlow*). None seen about North Philadelphia, Frankford, etc., after December (*Miller*).

Brown Creeper, *Certhia f. americana*. Last seen at Wayne, April 6 (*Redfield*), Oak Lane, April 7 (*Harlow*), Burlington,

N. J., April 22 (*H. F. Carter*), Bristol, April 8 (*Keim*), Frankford, April 25 (*Miller*).

White-breasted Nuthatch, *Sitta carolinensis*. Generally resident, most plentiful in winter.

Chickadee, *Parus atricapillus*. None seen during winter of 1905-6 at Lansdowne, very abundant the previous season (*A. D. White*), none seen 1905-6 winter, at Haverford (*Desmond*). Rather scarce this winter, 1905-6, at Oak Lane (*Harlow*), also at Downstown, N. J. (*Fair*), none till March 7 at Frankford (*Miller*).

Tufted Titmouse, *Baeolophus bicolor*. Resident at Frankford, Westtown, Tinicum, Media, Haverford and George School, February 23. Nest with 7 eggs and one young, Oak Lane, March 24 (*Harlow*),

Golden-crowned Kinglet, *Regulus satrapa*. Last seen at Haverford, April 29 (*Spaeth*). Media, April 8 (*Allen*), Wayne, April 13 (*Redfield*), Oak Lane, April 24 (*Harlow*), Frankford, April 18 (*Miller*).

Hermit Thrush, *Hylocichla g. pallasii*. Princeton, N. J., Feb. 24 (*M. S. Farr*).

Bicknell's Thrush, *Hylocichla a. bicknelli*. Media, May 7. "Markings of the Gray-checked Thrush but the smallest Thrush I ever saw" (*E. Fussell*).

Robin, *Merula migratoria*. A few all winter at Mt. Airy, Phila., Trenton, N. J., Bordentown, N. J., and George School. Other winter records: Tinicum, December 18, 1905, Yardville, N. J., January 18, Concordville, January 19, Moorestown, N. J., and Wayne, January 21, Frankford, January 22, and Oak Lane, January 27. Had eggs at Frankford, April 28 (*Miller*).

Bluebird, *Sialia sialis*. Wintered 1905-6 at Mt. Airy, Phila., Haverford, Media, Wayne, Olney, Kennett Square, George School, and in New Jersey at Cape May, Bordentown, Yardville, Trenton, but none this winter at Downstown. Great increase at Cape May, March 4 (*Hand*). Had eggs at Frankford, May 6 (*Miller*). Nest with pure white eggs, Swarthmore, May 16 (*Swayne*).

City Ornithology

The records for the Friends' Western Burial Ground, Sixteenth and Race Streets, Philadelphia, as observed by Mary S. Allen are as follows :

Autumn Migration, 1905.

Flicker, October 2 and 3.
Downy Woodpecker, October 6.
Towhee, October 6.
Brown Thrasher, October 6.
Robin, last seen November 11.

Spring Migration, 1906.

Flicker, April 14.
Towhee, a pair April 30, May 3.
Song Sparrow, March 10.
White-throated Sparrow, May 2, 3 and 4.
Chipping Sparrow, May 3 to 5, 8 and 9.
Brown Thrasher, a pair April 30, May 1, 3 and 9.
Robin, arrived March 10 and remained all season.

Abstract of the Proceedings of the Delaware Valley Ornithological Club for 1906.

January 4, 1906. Annual Meeting. Thirty-eight members present. The election of officers for the ensuing year resulted as follows: President, Dr. Spencer Trotter; Vice-President, William A. Shryock; Secretary, Herbert L. Coggins; Treasurer, Stewardson Brown.

Mr. Rehn outlined the distribution of the various species and races of Thrashers, illustrating his remarks by a map. An exhibition of lantern slides followed, and the Club then adjourned to the annual collation.

January 18, 1906. Seventeen members present.

Dr. Trotter read a paper on "The Life of Charles Lucien Bonaparte."

A Catbird (*Galeoscoptes carolinensis*) obtained at Stone Harbor, Dec. 31, 1905, by Dr. W. E. Hughes, was exhibited.

The abundance of Brant (*Branta bernicla*) along the coast was remarked upon, but it was generally conceded that the present open winter had been attended by a scarcity of small birds.

February 1, 1906. Twenty-four members present.

Dr. Charles Jack and Mr. Arthur F. Hagar were elected Associate members.

Mr. Stone, under the title of "A Review of the Year in Ornithology," gave an outline of the past year's work in the bird world, and also dwelt upon the more important lines for future investigation, both general and local. Mr. Coggins read an article from a periodical entitled "Why Sea Birds are White," which was followed by a discussion.

February 15, 1906. Sixteen members present.

Mr. C. J. Hunt read a paper entitled "The Pensauken Creek and its Bird Life," based upon observations made during a

number of visits to this attractive spot on the New Jersey side of the Delaware, and illustrated the value of concentrated labors in a limited area.

Under the title "A Few Parodies," John D. Carter gave interesting representations of the songs and call-notes of a number of birds, and justly emphasized the value of the sense of hearing in the identification of birds afield.

Mr. Harlow described the call of the Short-eared Owl (*Asio accipitrinus*), which he had heard recently on the Tinicum meadows after dark. The note has not been correctly described in any work on American Ornithology with which he was familiar, though Dresser, in his "Birds of Europe," gives a good representation of it.

March 1, 1906. Twenty-five members present.

Mr. Paul C. Brewer was elected an Associate member.

Wm. B. Evans read a paper entitled "The Birdman Afield," in which he spoke of the illusions experienced by those who make field observations, and the great care that should be exercised in establishing records where there was the least possibility of doubt.

Mr. Pennock reported that thirty or forty Robins (*Merula migratoria*) had wintered at Kennett Square, Pa.

Mr. Morris recorded a Killdeer (*Oxyechus vociferus*) that had wintered at Atlantic City, N. J.

March 15, 1906. Twenty-four members present.

Mr. Norman W. Swayne was elected an Associate Member.

Mr. Samuel N. Rhoads addressed the Club on "Florida's Subtropical Avifauna," outlining a recent trip to the southern part of the state, and dwelling upon the various birds peculiar to the lower extremity of the peninsula.

Mr. Stewardson Brown described a trip to Bermuda undertaken during the previous summer, in company with Dr. and Mrs. Britton, of the New York Botanic Garden, and commented upon the birds that he had observed.

April 5, 1906. Thirty-two members present.

Mr. Duncan McFarlane was elected an Associate Member.

Mr. Stone read a paper entitled "Some Light on Night Migration," describing graphically a flight of migrants observed on the evening of March 27, by the aid of the illumination from a burning lumber-yard in West Philadelphia (see Auk, 1906, p. 249).

Dr. W. E. Hughes exhibited a number of lantern slides illustrating the country traversed by him during two hunting-trips to Chihuahua, Mexico, which he had previously described before the Club.

April 19, 1906. Twenty members present.

Dr. Spencer Trotter read a paper entitled "The Relationship of the Passeres," which with the aid of charts gave a comprehensive presentation of the current classification of the Passerine group. An extended discussion followed.

May 3, 1906. Twenty-two members present.

Dr. Henry Tucker was elected an Associate Member and Mr. R. P. Sharples a Corresponding Member.

A paper on "Some Delaware Herons," prepared by Mr. Pennock, was read by Mr. Stone. A rookery of Great Blue Herons (*Ardea herodias*) located near Wilmington was described, which contained about twenty-five occupied nests.

Mr. Hunt read a paper entitled "The Shifting of a Crow Roost" (see Auk, 1906, p. 429).

Mr. Morris described a trip to Eaglesmere, Pa., from which he had just returned. He was impressed by the great difference in the advancement of vegetation in the mountains and about Philadelphia as compared with the nearly uniform progress of nest-building at the two localities.

May 17, 1906. Twenty-one members present.

Mr. Stone reviewed the work and theories of Hugo De Vries and their bearing upon the evolution of animal species. He considered that "Mutation" if it played any part in evolution was not a factor so far as vertebrate animals were concerned. A general discussion followed.

Mr. Fowler described a recent trip to the lower Susquehanna in the vicinity of York Furnace, Pa.

October 4, 1906. Twenty-five members present.

Mr. Harlow read a paper on the breeding of the Bobolink in the vicinity of Croydon, Bucks Co., Pa. He had observed about eight pairs of the birds within a radius of about a mile, and saw some of them practically every day from June 24 to July 26. Diligent search failed to discover the exact breeding-places, but on June 29 he found several young birds which were obviously only a few days out of the nest.

Mr. Stone reported several hundred birds killed on the tower of the City Hall on the night of August 28. While great numbers had been picked up before he visited the building he saw and identified the following: Redstart 47, Maryland Yellowthroat 38, Black-and White Warbler 27, Reedbird 26, Ovenbird 16, Small-billed Water Thrush 8, Kingbird 2, Yellow-breasted Chat 2, and one each of the following: Nighthawk, Alder Flycatcher, Orchard Oriole, Baltimore Oriole, Purple Finch, Red-eyed Vireo, Yellow Warbler, Chestnut-sided Warbler, Parula Warbler, and Veery. The platform on the tower where the lights are located, some 500 feet from the ground, was white with the excreta of the birds that had rested there, and as one looked over the railing dead birds could be seen lodged on the cornices and ledges that project from the tower at various points below. Many live birds had also found their way into the uppermost story of the City Hall which has open passage-ways leading to the main roof.

The death of Mrs. Edward Robins on July 6, 1906, was announced and the following minute adopted:

The Delaware Valley Ornithological Club has heard with deep regret of the death of Mrs. Edward Robins and desires to record its sense of the loss that the cause of bird-protection has suffered in the death of so earnest a worker, and also to express its appreciation of Mrs. Robins' labors in furthering popular interest in birds and bird study.

October 18, 1906. Twenty-two members present.

Mr. Palmer read a paper on a "Robin and Grackle Roost near Concordville, Pa." (See *antea*, p. 26).

The following amendments to the By-Laws were adopted:

Add to Art. IV, Sect. 2.

Not more than eight Associate members shall be elected in any one year, the actual number to be chosen at any meeting being determined by a majority vote of the Active members present. Elections for members shall be held at the first regular meeting of November and March.

Alter Art. IV, Sect. 3, to read:

A unanimous vote of the Active members present and voting shall be necessary for the election of an Active, Corresponding or Honorary Member, and a two-thirds vote for the election of an Associate member or officer.

November 1, 1906. Twenty-seven members present.

Messrs. George C. Roberts and Ernest A. Butler were elected Associate members.

Mr. Carter described the finding of a nest of Henslow's Sparrow (*Ammodramus henslowi*), near Marlton, N. J., on May 21, 1906. It was located deep in a tussock of grass, in a small cranberry bog, and contained at this date four eggs.

Mr. DeHaven spoke of a Mockingbird (*Mimus polyglottos*), which had been observed by him during the past summer at Beach Haven, N. J.

November 15, 1906. Sixteen members present.

Dr. Weygandt summarized his observations upon the birds he had found roosting upon the ground. In winter he had found the following on the ground after dark, obviously settled for the night: Woodcock, Quail, Snowy Owl, Meadowlark, White-throated Sparrow, Tree Sparrow, Junco, Song Sparrow, Fox Sparrow and Robin. In summer he had recorded the Ruffed Grouse, Killdeer, Whip-poor-will, Night Hawk and Vesper Sparrow. He was inclined to consider ground roosting far more prevalent than generally supposed.

Mr. Keim, who had just arrived from Washington, gave an account of the Congress of the American Ornithologists' Union.

Mr. Brown reported a Snowy Owl at Avalon, N. J., November 8.

December 6, 1906. Twenty-nine members present.

Mr. Stone read a paper received from Mr. Richard F. Miller, giving an account of the occurrence of the Lapland Longspur (*Calcarius lapponicus*) in the Delaware Valley. The first record was a specimen obtained in a market in Philadelphia by John Cassin in January, 1849. The next specimen that we know of was secured by C. D. Wood from a flock of Snow Buntings at League Island, Phila., about 1864. In 1895 four were observed: two at Princeton, N. J., February 13, one of which was shot, one shot by Isaac Ruff on the New Jersey shore of the Delaware opposite Tinicum, February 21, and another obtained near Salem, N. J., by Henry Warrington, December 28. The last was associated with Horned Larks, the first two with Snow Buntings. Mr. Miller recorded a seventh specimen seen in a field at Harrowgate, Phila., November 22, 1904. "It was alone, but evidently had come south with a flock of Titlarks that were nearby. Unlike the wild Titlarks, it allowed me to approach within twenty-five feet and less as it stalked silently about, furtively watching me before taking wing. When flushed it flew only a few rods, alighting in the short grass and running restlessly about like a Robin. It was thus flushed several times, as I wished to be fully convinced of its identity before shooting it. At the discharge of the gun it arose with a startled cry, and with rapidly vibrating wings it mounted higher and higher in the air, occasionally uttering a one-syllable alarm-cry, till it was soon a mere speck in the sky, and then disappeared from sight."

Mr. Miller was of the opinion that if flocks of Horned Larks were carefully examined more Longspurs might come to light, as their presence among these birds would be much less readily detected than among the Snow Buntings.

Mr. Harlow exhibited a Migrant Shrike (*Lanius ludovicianus migrans*) obtained at Oak Lane, Phila., December 1, 1906, and recorded a Saw-whet Owl (*Cryptoglaux acadicus*) taken in Pike County, October 30. Mr. Spaeth reported two of the latter species shot at Cape May Point, N. J., November 30. Mr. Hunt mentioned a winter record for the Ruby-crowned Kinglet.

December 20, 1906. Twenty-two members present.

Messrs. Baily, Carter, Evans and Stone described a trip to Pocono Lake taken during June of the present year (see *antea*, p. 30).

Mr. Stone reported a Red-throated Loon (*Gavia lumme*) picked up on a street in the city early in the morning (Dec. 20) and brought alive to the Museum. It seemed quite uninjured, but when placed on the floor could not raise itself in flight nor could it stand upright or lift its breast from the ground. It twisted its head from side to side, sometimes crooking it in the middle after the manner of a goose, and struck viciously at any one who approached within reach. A Goshawk (*Astur atricapillus*) was exhibited, obtained Nov. 15 at Cape May Point, N. J.; two others were reported from near Tuckerton, N. J., the middle of the same month, and taxidermists reported large numbers all over the country.

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Bird Club Notes

Our half-tone of Bartram is from Welch's engraving of the portrait by Charles Wilson Peale, while that of the house is from an original pencil sketch by George Spencer Morris.

* * *

The Club held sixteen meetings during the year, with an average attendance of twenty-four, forty members being present at one or more meetings.

* * *

Mrs. Edward Robins, Secretary of the Pennsylvania Audubon Society and President of the Spencer F. Baird Ornithological Club, died at Chelsea, N. J., on July 2, 1906.

Mrs. Robins' earnest work for the protection of birds and animals as well as her efforts to promote the study of ornithology in Philadelphia and its vicinity are well known to the members of the Club, and her place will be difficult to fill.

As Miss Julia Stockton Hopkins her early life was spent on her father's estate at Torresdale on the Delaware river above Philadelphia. Here she developed her great love for birds and nature, and with the aid of Audubon's work became familiar with all the commoner birds of the neighborhood. After her marriage to Edward Robins, the well-known author, she continued her ornithological studies and published a number of excellent articles on the habits of our wild birds, mainly in the "West Chester Village Record" and the "Observer." With the revival of the Audubon Society movement in 1896 she organized the Pennsylvania Society and was indefatigable in advancing its work. She was also a member of the Bird Protection Committee of the A. O. U. for several years, and after joining the Union maintained an active correspondence with many ornithologists in different parts of the country. As the friend of everyone interested in birds her loss will be widely felt.

La Rue K. Holmes, a promising young ornithologist of Summit, N. J., and for some years past a Corresponding Member of the Club, died at the home of his parents on May 10, 1906. He was born December 2, 1883, and was always deeply interested in the study of nature. He was a painstaking and reliable observer, and was soon looked upon as an authority on the ornithology of his vicinity. He generously furnished any data that he could contribute toward such work as the Club from time to time carried on relative to migration and geographic distribution, and prepared for the 1904 CASSINIA an admirable paper on the Short-billed Marsh Wren.

Mr. Holmes had recently been appointed an Assistant Curator in the American Museum of Natural History, and his career was full of promise.

* * *

Through an oversight the notice of the death of Prof. Thomas G. Gentry, which occurred at his home in Philadelphia, March 12, 1905, was omitted from the last CASSINIA. Prof. Gentry was born in Philadelphia, February 28, 1843, and had a long and important career as teacher in the public schools of the city, being at the time of his death a supervising principal. He was always a student of nature and a collector of specimens and curiosities. For some years his interest centered upon ornithology, and he published three works upon this subject, the "Life Histories of the Birds of Eastern Pennsylvania," 2 vols., 1876 and 1877; "The House Sparrow at Home and Abroad," 1878, and "Nests and Eggs of Birds of the United States," 1880-82.

* * *

The Club was represented at the twenty-fourth Congress of the A. O. U. in Washington, D. C., by Messrs. Baily, Pennock, Rhoads, Keim and Stone, while Messrs. Miller and Todd, of the correspondents, were present.

Mr. Baily exhibited a number of excellent slides of birds from life, and Mr. Rhoads presented an interesting paper on "Delaware Valley Wild Fowl—Past and Present."

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Delaware Valley Ornithological Club.

1907.

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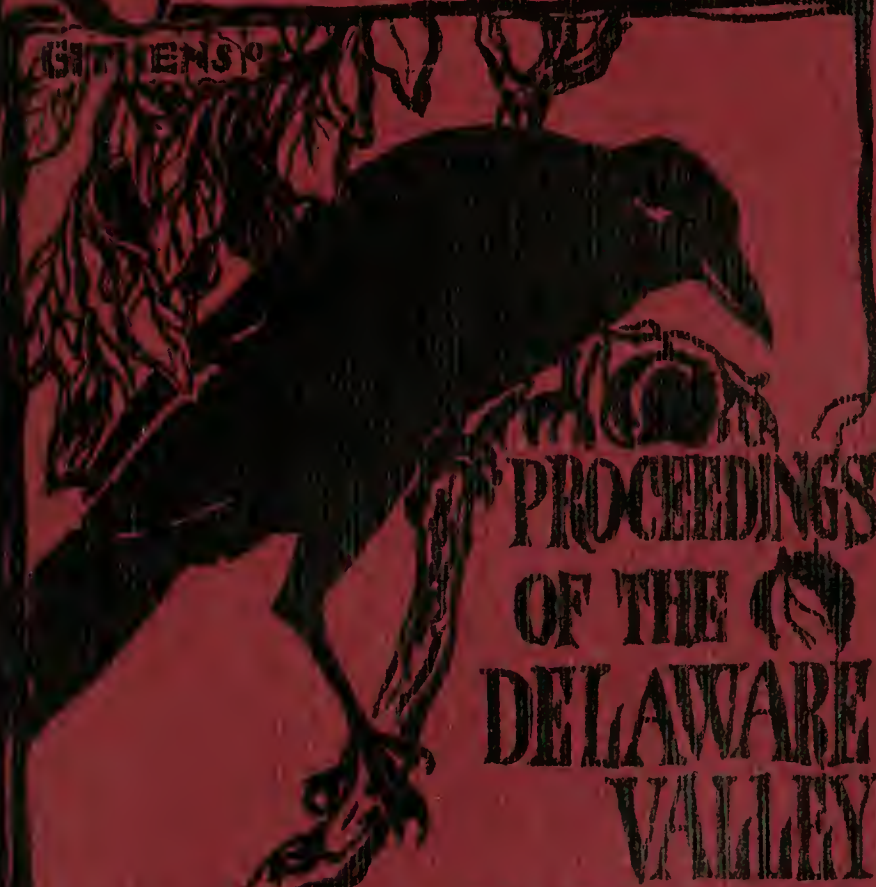
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CASSINIA

A BIRD ANNUAL

G. H. ENSP



PROCEEDINGS
OF THE
DELAWARE
VALLEY

ORNITHOLOGICAL CLUB
OF PHILADELPHIA

1907

CASSINIA

An Annual Devoted to the Ornithology of
Pennsylvania, New Jersey, and Delaware.

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No. XI.

PHILADELPHIA, PA.

1907.

Adolphus L. Heermann, M.D.

BY WITMER STONE

Of the various naturalists who served on the Pacific Railroad surveys, the name of Heermann is probably better known to us than any other. This is not so much from the extent of his publications or from the number of new species that he described, as from the fact that several familiar birds of our western coast have been named after him; for example, *Larus heermanni* and *Melospiza cinerea heermanni*.

The practice of naming species of animals and plants after persons has often been decried, but the fact that it perpetuates the memory of collectors and students whose lives no biographer has taken the trouble to chronicle, seems ample justification. Adolphus L. Heermann was one of these: a field ornithologist of the first rank during the forties and fifties to whose researches our science owes not a little; yet of his life we have no record.

From estimates of two who knew him, I infer that he was born about 1818, probably in South Carolina. But on April 29, 1845, when elected a member of the Philadelphia Academy, he was spoken of as a resident of that city, and always returned

thither from his expeditions. In 1846 he was studying medicine in Baltimore, and probably graduated the following year.

Of Dr. Heermann's first expedition to the west, I have been able to gain but little information. He says incidentally in one of his papers that he made a journey to the Rocky Mountains in 1843, and Mr. H. E. Dresser, the British ornithologist who knew Heermann during the last few years of his life, writes me that he understood him to say that he first crossed the Rocky Mountains with Fremont. The latter's second expedition occurred in 1843, but I find no mention of Heermann's name among the members of the party.

In March and April, 1848, Dr. Heermann accompanied John Krider, the well-known gunsmith of Philadelphia, on an expedition to Florida. They stopped at Charleston, where they did some collecting, and passed on to Key West. At this point, and at Charlotte Harbor, they seem to have done most of their work. The latter spot in those days, to quote Heermann, "almost swarmed with Herons, Cormorants, Snake Birds, Spoonbills and Pelicans * * * while on the sandbars various species of Terns were to be found in abundance, and at a distance, and not to be approached easily, I have frequently seen flocks of Flamingoes dredging perseveringly for shell-fishes, or standing in groups, looking almost like files of soldiers in red uniforms."

In 1849 Dr. Heermann made his first trip to California, where he remained until 1852. In a letter from Cassin to Baird, dated August 28th, he wrote with much enthusiasm: "Heermann has arrived from California with a collection of about 1200 bird skins. I have not seen them all, but expect to to-morrow. I have a portion of them brought in his trunk, among which one—a Hummingbird, *T. alexandri* Boucard, is new to our fauna; a Wren, *T. mexicanus*, and an undescribed Finch; also a squirrel, which Le Conte says is new; also the greatest kind of a lot of nests and eggs." The Finch was *Ammodramus rostratus*, shortly afterwards described by Cassin from Heermann's specimens.

During his stay in California Heermann spent most of his time at Sacramento, but also explored the American and Calaverus rivers, and made trips to San Francisco, San Diego, and

the Coronados and Farallone Islands, as well as one to Guaymas, Sonora.

Heermann described his collection upon his return to Philadelphia in a paper in the *Journal of the Academy*, II, pp. 259-272 (Jan., 1853), entitled "Notes on the Birds of California, observed During a Residence of Three Years in that Country." His water birds did not arrive promptly, and the paper went to press without waiting for them, so that only a few notes relating to the new species were ever published. These appeared in a subsequent paper in the *Proceedings* and in some of Cassin's papers.

As he mentions birds observed at Mazatlan it seems evident that he traveled to California by the isthmus route, though there is no definite statement to that effect.

Upon the organization of the Pacific Railroad survey parties Dr. Heermann obtained the appointment of surgeon and naturalist to Lieut. Williamson's party, which was to explore southern California with the object of finding available passes through the mountains by which the routes along the 32d and 35th parallels might reach the coast.

They embarked at New York May 20, 1853, on the steamer *Illinois* bound for Aspinwall, and reached San Francisco June 20th. After nearly a month spent at Benicia they started south on July 10th and reached Tejon August 21st and Yuma in December, finally returning to San Diego December 20th. Lieut. J. G. Parke, who was Williamson's assistant, was then sent east by way of Yuma, the Pima and Maricopa villages, Copper Mines and Doña Ana to El Paso and thence to San Antonio and Washington. Dr. Heermann was attached to this survey, and upon his return to Philadelphia prepared two reports covering the birds collected on the two explorations. These, however, were not published until 1859, appearing in Volume X of the *Pacific Railroad Survey*.

In 1855-6 Lieut. Parke made another survey from Yuma to El Paso, but Heermann was not attached to this expedition. He, however, went to San Antonio for the winter of 1854-5, and was there also during the winter of 1855-6 and collected quite a number of birds, as he states in letters to John Krider which I have had the privilege of reading.

I have no record of Dr. Heermann from this date until 1862 when Dr. Edward J. Nolan, librarian of the Philadelphia Academy, tells me that he remembers him among those who frequented the Academy when he as a young man first became connected with the institution. Dr. Heermann was then suffering from *locomotor ataxia* which seriously crippled him. His time at the Academy was spent in making small colored drawings of birds copied from works in the library, which he arranged at the back of the trays of eggs in his cabinet. He was laboriously trying to match each color with a cake of paint in his box, and was astonished and delighted when Dr. Nolan ventured to show him that any desired shade could be obtained by a judicious mixing of a few primary colors. Soon after he removed to Texas where at some time or other he and his brother had obtained property. He never returned to Philadelphia.

It was at this time that Mr. Dresser made his acquaintance, and I quote from the letter which he kindly wrote me under date of March 28, 1906, when I asked him for any information he might possess relative to Dr. Heermann :

“ When I arrived at San Antonio on the 16th of September, 1863, I was unaware that Dr. Heermann lived there, but Col. Dickinson (2d Texas Cavalry) with whom I was, told me about him, and I at once looked him up. I found him a strong, broad, sturdy man of about fifty (perhaps a year or so older), but I never asked his exact age. His hair and beard were tinged with gray, and he must have been a very strong man, but was then rather lame, and stumbled now and then, and it afterwards proved that his lameness was *locomotor ataxia*. He and a younger brother had some house property in San Antonio and a tolerably large rancho on the Rio Medina, a ride outside San Antonio. One of the houses in San Antonio was let as a sort of private hotel, and the next house which they also owned was a bungalow consisting of three or four rooms, which A. L. Heermann reserved for himself and lived there, getting his food and attendance from the adjoining house. During the whole time I was in Texas my headquarters were San Antonio, and after a time I arranged with A. L. Heermann to take one of the rooms in his bungalow, and lived with him when in

the town. This I did at the request of his brother, who thought it would be well if some white man were there to look after him, so that he should not be neglected, and I for my part was glad to be there, so that we could work together at ornithology. Besides I had two thoroughbred horses, which were well trained and used to firing, for I always fired from the saddle when out shooting, so I could and did take Heermann out with me, and being quite sound from the waist upwards, he was all right when once in the saddle. Heermann had a small collection of birds in his rooms at San Antonio, and he and I collected together, and I kept my birds there also.

“Heermann’s lameness increased quickly, and during the latter part of my stay in Texas it was so bad that he could scarcely walk far, and stumbled terribly, so at last to avoid a fall we used, when he rode with me, to strap his legs to the saddle. I never dared to take Heermann far out, or where there was any chance of danger, and he generally went out only when I was on a collecting trip within a dozen miles of the town. When I could get away we would go out to the rancho and collect there for a day or two. Heermann never married, and told me he never had any idea of ‘committing matrimony.’

“I left San Antonio in August, 1864, and returned to Europe. Later I had a letter from Dr. Heermann’s brother stating that during his absence from the house the doctor would go out alone, taking his gun to obtain some specimens of birds, and was found one day, dead, having evidently stumbled and fallen, and his gun going off had killed him.” This was on September 2, 1865.

Dr. Heermann was one of those pioneers to whom we owe a great deal in the development of our knowledge of western birds. A man who was willing to put up with all kinds of hardship and danger with no other reward than the discovery of new birds or additions to our knowledge of others. He also possessed the ability not only to prepare his specimens well but to preserve them during the exigencies of travel and bring them safely home.

It is plain to see through all his writings that his main interest was in nests and eggs, and in one of his Pacific Railroad reports the term “Oology” occurs possibly for the first time in

the literature of North American birds. His collection and the little pictures already alluded to, as well as his manuscript notes, were left with his old friend John Krider when he went to Texas and have since disappeared, though the eggs no doubt were incorporated in the Krider collection, now the property of Dr. Wm. E. Hughes.

In the winter of 1852-3 Heermann prepared a complete catalogue of the Oological collection of the Academy which was published in the Proceedings in March, 1853.

Cassin always spoke in the highest terms of Heermann. In October, 1852, he desired to accompany the Japan expedition and Cassin said, "I will further his views in any way in my power; a better man cannot be had. . . . He is an able collector and it might be of great service to the expedition that he can speak French volubly—as well as he can English—especially if the expedition has much to do with the Russian fleets or authorities." However, as has already been stated, Heermann accompanied Williamson's California party and not the Japan expedition.

While an able writer, as his reports and several articles in Cassin's "Birds of California and Texas" testify, Heermann seems to have been primarily an explorer and field naturalist, and as Cassin tells us, "he thought the writing of reports a bore." There are, however, always plenty of men to do this part of the work, and in the early days especially the men who were absolutely essential to the advancement of faunal zoölogy were the hardy, persevering, field naturalists of which class A. L. Heermann was a type.

Some Birds of Brown's Mills, N. J.

BY CORNELIUS WEYGANDT

Old years brought back by killdeer calls; swallows that dared our northern March; the ripening of a friendship for Pine-warblers—these are the ornithological experiences that stand out in memory as I look back upon our week at Brown's Mills-in-the-Pines, March 27–April 3, 1907. Brown's Mills lie just within the pine barrens that cover New Jersey, southeastward of a line drawn from Sandy Hook to Salem. The Rancocas Creek, dammed here, spreads out into a little forked lake, from which two considerable branches extend eastward through low-treed sand wastes and cedar and cranberry swamps. The absence of bird life in these barrens, though it was migration time, was more striking than the presence of any birds. Follow the narrow trails back into them in any direction, at any time of day, you would see little life even along the streams. Above you Turkey Buzzards were always circling, but what they found to feed on, where the few piners that lived hereabouts could barely scratch a living, is hard to tell. Save for the low sigh of the wind in the pines that scarcely ever ceased, the buzz of the Pine Warblers' song, first from this tree, then from that, and the constant shrilling of the Snowbirds from bush and ground, there was generally in these early spring days no more sound of life than sight of it in this monotonous region. Here and there *Pusilla's** little song, clear and lonely, was piped from the scrub-oak, indicating how much more applicable here would be his New England name of Bush Sparrow than our Field Sparrow of the Middle States. Robins would be seen going over on any day's walk or drive, and sometimes a Crow; several times Flickers would loop across from some pine-stub, dead and charred, to a distant neighbor; we would pass a few families of

* *Spizella pusilla*.

Chickadees, never more than four in number, and we would flush an occasional Blue Jay. Two Kinglets—the Golden-crown—were come upon one day on our way home from White's Bog through pines rather higher than most in the neighborhood, and once two little Brown Creepers turned up with the Chickadees that were always about the pond. These eleven varieties were all we saw in the barrens—unless you may count the Black Ducks of the pond—and all these but the Kinglets and the Creepers were found also in the cleared land westward, and, with the exception of the Pine Warblers, were plentiful there.

Three miles westward from Brown's Mills you are in as fine land as may be found in all Burlington County, the banner farming district of New Jersey. Here birds were much plentier than in the barrens, and in drives and walks to Pemberton and Lewistown and Pointville we found Bluebirds about every orchard, Meadow Larks in every great flat field, Song Sparrows by every road-side and stream-side and fence-row, Grackles in every group of spruces and pines about the farm-houses, many of which were great structures of old red brick or old white clapboards. Redwings were less plenty, but they were tuning up, as yet but hoarsely, from many bottoms. Robins were, curiously, not so abundant as in the cleared land about Brown's Mills; nor were the Vesper Sparrows. Perhaps the flocks of these latter two varieties were halting here, in this warm oasis of farm land in the pines, before going further north.

The Robins and Vesper Sparrows were particularly in evidence on Sunday, March 31st. Toward noon we walked up the Pemberton road. There had been no sun all morning, and even now cold, gray clouds walled all the skies; yet there was a glare over the white-sandy fields, the steely-dyked ponds and even the solid-green pines, an unaccountable weird-gray glare. It was a sky that foreboded snow, yet the day was not cold. A wild-flying bird drove eccentrically northward in curved zig-zags. Its crying was strangely familiar, but for a moment I could not identify it. A ragged piner boy came to the rescue. Playing before a dilapidated shack by the roadside, which leaned westward like the blown trees of a seabeach, he saw my perplexity and cried, "That's a Killdeer, Mister." That cry-

ing had brought back a country outing in Chester County a quarter-century back. Now I knew why, for the Killdeer were always wheeling and crying about those upper reaches of Pickering Creek. In train of these memories came others of delightful wanderings in later years, and always in unfamiliar fields, since my Wissahickon Hills have not in my time been Killdeer country. The bird's wild crying and wilder flight, the weird-gray glare, the thoughts of long ago, combined to move me strangely, so that I am sure I shall not soon forget that scene—the straight road of yellow gravel, past the dyked pond and low houses by the roadside, the white fields with their neat snake-fences, the dark horizon of pines. I noticed an apple tree by the door of the forlorn shack, to wonder even if its blooming in May would lend the place a suggestion of home. And yet a boy bred here harbored keen interest in birds and their ways, for he knew the White-bellied Swallows, of which five were flying over the dyke opposite, and that they nested in boxes, and that other swallows nested in barns, and still others in chimneys.

All the way down this road to the pond we had passed little bunches of Robins and scattered Vesper Sparrows. One bunch of the Robins had dropped down into a tree to rest on its branches like Cedarbirds close together, but they belied any weariness by bursting into a chorus of song. The Vesper Sparrows, too, had sung a good deal. On our way back the country seemed alive with both species. Robins rose from the ground everywhere, and, lighting on fences and trees, sang as if in their twilight chorus. Had the cold, rainy morning prevented their song at dawn, and were they seizing this first kindly hour of the day to celebrate it, or were they rejoicing in their arrival at old haunts after a long journey? The Vesper Sparrows, too, seemed to have greatly increased in numbers in the fields we had found them in an hour before. We sat down on a bank to listen to the bird chorus. I had never anywhere heard so much bird song at any time of day. There was no moment when many Robins were not singing; no moment that the sound of Vesper-Sparrow song was not in our ears in great volume; never, even after sun-down in Berkshire sheep pastures, had I heard so many singing. The Robins and Vesper Sparrows, though dom-

inant, were not the only singers. Redwings gurgled from the little cedars along the fences, and Grackles from the greater cedars; Meadow Larks chattered and fluted from ground and fence and air; Field Sparrows uttered their little complaints from low singing stations here and there; everywhere Snowbirds twittered; and a solitary Song Sparrow bubbled up his notes from tubes that seemed ill-practiced.

If bird boxes argue a love of birds, the people of eastern Burlington County, both in the pines and without, must be written down great bird-lovers. Some cynics, not native, whom I consulted on the presence at every other house of a bird box, held that it rather indicated plenty of time on the part of the householders. I have heard the same explanation of the "Martin poles" in the little mountain villages of eastern Kentucky. Two native Brown's Millers whom I questioned were amused that any one should wonder why people put up the boxes. "People always put up bird boxes," was their comment, and they disclaimed my suggestion that the boxes were put up for Martins. "Just for any kind of bird that came along," they said. I had had it in mind that as this was a country favored for chicken raising the custom had arisen from the well-known utility of Martins as clamorers over hawks and their pursuers. "They perhaps put up the boxes in old time, when there were more Martins, to attract them and through them save their chickens from the hawks and crows," I thought, "and the practice has continued now when the Martins are scarcer."

Certainly now Bluebirds and Whitebellied Swallows and English Sparrows occupy many of the boxes, although Martins are still plentier hereabouts than in most places in the Delaware Valley. It is very usual to see two boxes to a house, a larger box with several openings great enough for Martins, and the little box for one pair of Wrens so common in all of our country that has the House Wren. One house had three Martin boxes, of marvelous architecture, and a most oppressive bottle-green. These boxes boasted loggias, porticos, steeples, all those extravagances that so delight the habitual whittler. Next door, a hundred yards down the road, and next to that again, the Martin box had just been remounted. In both places the unweathered

pole was tin-banded for three feet up from a point about seven feet above the ground, presenting an unshinnable space above puss's jumping distance from the ground. Pointville, however, can boast a more palatial Martin box than any at Brown's Mills. So large is the barrel from which it is made that I first thought it a dove-cote, for pigeons, too, are plenty about many of the little barns. This barrel presents a circular shingle roof narrowing up to a spire and three tiers of holes. It could accommodate a large colony of Martins, but now I am told it is no longer visited. I was disappointed at seeing no Martins during my stay, for even in our colder hill country in Pennsylvania I had known them to come to their old homes before the end of March. As it happened, I saw no birds of any kind about any bird boxes, save a Bluebird sitting in the portico of a diminutive two-holed structure mounted upon a very climbable pronged cedar pole. This box was before a saw-mill several hundred yards from any habitation. Any raccoon or possum or wildcat from the near-by wood could have clambered up to it with ease. As I watched, the bird's mate came to the box with straw. That was the only nest-building of any kind that I happened upon during our week.

It was indeed a most remarkable week. The Wednesday we arrived, March 27th, was seasonable. Thursday it grew warmer, and on Friday with a thermometer reaching 87 we lay around out of doors as if it had been mid-summer. Saturday was a tolerable day, somewhat cooler, although it greyed up in the afternoon. Sunday was gloomy and foreboding, and Monday morning we awoke to a driving snowstorm. Tuesday was warmer, with snow disappearing, and Wednesday as fine an April day of rare air and blue skies and heartening sun as one could wish. The great heat of Friday was followed by a great increase of birds on Saturday. They held over on Sunday and all but the swallows, which we first saw Sunday, through the snow of Monday. The evening we arrived the only sign of bird life was a Robin on the lawn. The next morning I heard but one Robin song. In Germantown the morning before I had heard a dozen, and in Princeton, a few days earlier (March 22d), more than a score. There were many Robins about during the

day, so it may be that most of the Robins of the neighborhood resorted to some roost hereabouts where their dawn songs were sung far out of my hearing. I doubt, however, if this explains it, for the birds at home were still resorting—as they usually do until the middle of April—to a near-by roost nightly. Altogether the distribution of the Robins at Brown's Mills puzzled me. That very many breed here empty nests in every roadside tree attest. It was surprising, too, that most of the Robins of the neighborhood were still in flocks. Was it that the Robins that breed at Brown's Mills were still to come from the South? And does this flocking indicate that our earliest Robins are the birds that summer in the far north?

The morning after our arrival we heard in the early hours besides the solitary Robin only the Carolina Chickadees, which persistently sang against each other from the tall pines about the inn, and Meadow Lark notes that pierced through to us from the open land northwest. The day was warm, but a walk through the pines by the pond, and an eye on the skies, and open ears as we loafed about the lawn, brought the list this first day only to thirteen. Flickers called rather frequently from the woods; Bluebirds infrequently gurgled across, high up in the skies; a solitary Grackle labored west at sunset. All day long Chipping Sparrows and Pine Warblers and Snowbirds graduated their similar songs into one another so that at times you were troubled to identify the singers. The Snowbirds were legion this day everywhere, on the inn lawns, on the sandy fields, in the peach and pear orchards and in the pine woods. I have never seen so many anywhere as I saw this day and the next. They sprang up before you like grasshoppers in a June meadow. A Downy Woodpecker was busy off and on in the tall trees outside our window; twice I saw a pair of Doves hurtle by, and once I heard a Song Sparrow, which in the pines is not a common bird, but when you are well without them as plenty as may be. The Turkey Buzzards that you would see aloft almost any time you looked up completed a list of thirteen birds, not many for a day spent out of doors in the last days of March. Nor was there an eventful episode in bird life to note. One bird a friend encountered here a year before was far more interesting

than any I came upon. He had been carried out of doors on his cot and placed in the sun against a wind-break of low pines. As he dozed there he felt a plucking from below at the canvas of his bed. "A curious trick in a chicken," he thought, and reached his hand under to investigate. Yes, what he grabbed was feathers. Pulling the fowl out he was surprised as at an apparition by the red-head and long, flopping wings of a Turkey Buzzard. The Buzzard was, he learned, a regular habitue, and free to all the privileges of the place. What had become of the bird I could not learn.

Friday was the first day I saw Crows, and every day after that I saw them, but it was only seldom in the pines. In the farm lands they were very plenty. There were Phoebes by every stream I crossed this day, brought out by the warm weather, I suppose, from some retreats whither they had followed the gnats they prey upon. Now, too, we met Blue Jays, fluting, scolding and ringing their mellow bell-notes, but they were not this day or any other plenty in the neighborhood. Most of the birds we saw this day were those we had seen the day before. We drove by narrow trails to Hanover Furnace, passing but few birds other than Field Sparrows, Snowbirds and Pine Warblers in the pines, but in the clearing about Hanover Furnace finding flocks of Robins with many Flickers feeding on the ground among them, and Goldfinches hanging on old weeds. There were Meadow Larks, too, in these broad fields, uncultivated now and lapsing into barrens, and Vesper Sparrows and Bluebirds in the old orchards. It is a lonely, forsaken place, Hanover Furnace, with a great house falling into decay and many cellar holes to tell that here was once a prosperous forge. A pinner's boy in the door-yard of a wretched house at the cross-roads, which, with one in sight across a quarter-mile field, was all we saw of the present-day Hanover, gave us explicit directions to White's Bog, a great cranberry dyke two miles and more south. It was a dreary ride across waste lands, with low pine and scrub oak, and half the way boggy. Here were only Pine Warblers and the inevitable Buzzards. About the cranberry pond were many Sparrows, of several kinds, but among them I could identify only the Song Sparrows. Here, too,

were Buzzards and Robins, but comparatively few birds all told. A pair of Kinglets were the only birds other than Buzzards and Pine Warblers we met on our four miles through the pines back to Brown's Mills. This afternoon Whitebellied Nuthatches were the new birds in the Inn woods, where the Caroline Chickadees sang so freely they attained to something of the melody of the Crested Tit.

Saturday morning we saw our first ducks on the pond, a pair of Black Ducks, and once afterwards we got up a pair from one of its backwaters. Birds were always scarce about the lake, not even a Kingfisher making his appearance there while we were by until Tuesday, April 2d. This one and a pair that were seen the next morning investigating a high dry bank by the roadside, far from water, possibly with nesting intentions, were all we saw on our trip. The other new bird of the day was a single Fox Sparrow, in full song. Sunday brought no new bird, save the Whitebellied Swallows and the Killdeer, and a few Cedar birds, who curiously lit in the same tree with a bunch of Robins. Walking toward Lewistown on Monday I saw a Cooper's Hawk. Tuesday at sunset I came upon a Hermit Thrush in the deep swamp by the Raneeocas. Wednesday morning a drive to Pemberton added a Sparrow Hawk to the list. This completes the list—thirty-one in all, the smallest I ever recorded from a week of spring.

What I learned ornithologically from the trip was something of Pine Warblers. I had met them before, now and again, but their inconspicuousness and unappealing song had left little impression upon me. Nor can I say now after a week, in which I think during the day time I was hardly ever without their song in my ears, that I am greatly taken with them. They have now, however, an identity in my mind. They are cheerful, hardy little fellows, stoies in a snowstorm and epieureans in sunny weather. The pines were full of them all the time of our visit, but they were plentiful also along roadsides through farm lands. Had I left after a four days' stay I would have associated them only with the pine woods, whose lazy tonic quality their song re-echoes. At about every hundred yards in the high pines about the lower end of the pond you would come

upon one singing. Standing at any point hereabouts and listening you could pick out five or six individual voices. Behind those would be a hum of others in the distance not unlike the sound of the wind in the pines. Those I observed did not pass from tree to tree like a Kinglet, but after hunting through the top of one pine dipped to another a hundred yards distant, sang there, sometimes sitting still on a dead twig Chippy-like and stuttering out Chippy-like notes, and at other times singing as they hunted over the top branches. During the day they did not seem to be in flocks, but generally single, though often I saw a pair together. At night-fall I several times found four or five together in low bushes by the water side. As I was walking by the pond on Monday evening after a day of snow I heard a very faint cheep. A stand-still of a few minutes, and peering around discovered four little birds on some sweet-pepper bushes that extended out over the water. It was a little while before I could identify them as Pine Warblers, because the one that was in male plumage kept persistently in a thick part of the bush. The three others were, in that light, without any yellow whatsoever. But even before I saw the male, white patches in the tail feathers and whitish wing-bars indicated the identity of the others. They could hardly have chosen a more uncomfortable hunting-ground. There they were, just by the water, with no protection from the bitter wind that was blowing out of the sunset across the pond. Yet they hunted about lively, cheeping to each other constantly, though the wind every minute fluffed up their feathers, or, catching their tails, veered them around like miniature weatherecks. The next morning I found a little flock of them feeding along a burnt-over fence-row between road and orchard. They were very tame, hopping within ten feet of me in their search for whatever it was attracted them in the charred stubble, and mounting the fence to sing at even nearer distance. They would be searching the interstices of the rails of the snake fence like Wrens the minute after they had been ground hunting like Chippies. A further versatility of procedure was revealed by a little flock in the pines below the inn the same evening. They drifted into a tree above me as noisily as Yellowbirds. Love chases were inter-

spersed with Vireo-like hunting through the tops, creeper-like climbing on the larger branches and Flycatcher excursions out into the air. All these activities were accompanied by ceaseless song, which once in a while had a more melodious quality than the lazy drawl so characteristic of the sun-steeped pine tops of midday. Whether the Pine Warbler is a bird you can take deep into your affections, I do not know. Only acquaintance with all his ways would reveal that, but what I learned of him in one week augurs well for a greater liking. For a Warbler he is a restful bird, symbolical in this, as in song and dress, of the pine barrens that are his home.

Type Birds of Eastern Pennsylvania and New Jersey

BY SPENCER TROTTER

The title, "Type Birds," may not be exactly clear as to the meaning it is intended to convey. By "type" I mean the individual specimen that furnished the *first* or *original* description of a species under the Linnean or binomial nomenclature. Prior to this use of generic and specific names to express the idea of likeness or unlikeness in living beings—to describe a form of life as distinguished from other forms—a cumbersome description in Latin was resorted to which carried with it but a vague impression of a distinct form of life, and gave no clue whatever to relationship. Catesby was a pre-Linnean describer of numerous North American birds, but while his descriptions are good, his cumbersome polynomial names, though interesting from a purely historical point of view, do not hold in the nomenclature of to-day.

Linnæus, the founder of the binomial system, and Gmelin, the compiler of a later edition of the "Systema Naturæ," in their efforts to name all known species in accordance with the new mode went over the works of their predecessors and furnished each bird there described and figured with a proper Latin binomial name, quoting only a few words of description in their "Systema," but giving a reference to the original work. So while we quote our names from Linnæus or Gmelin, we must still go back to the mustier volumes of Catesby, Edwards, Kalm, etc., to find out where the birds came from, and just what they were.

It has been a matter of some interest to me to trace the localities from which the original individual or type specimens of our common birds came from, and to discover how many of them were obtained by Philadelphia collectors.

When Linnæus published the tenth edition of his "Systema Naturæ," in 1758, in which he first adopted the binomial nomenclature, he was almost wholly dependent upon Catesby's "Carolina" for his knowledge of North American birds, and in this way the type locality of many of our familiar species is "Carolina;" Catesby not being very explicit as to definite localities. By the time the twelfth edition of Linnæus' "Systema" appeared in 1766, Geo. Edwards' "Gleanings" had been published, and herein are figured and described a number of birds sent to England by John and William Bartram, of Pennsylvania. John sent the "Ruffed Heathcock," while William sent, June, 1756, fourteen dried skins, mostly nondescripts with colored drawings of some and numerous notes on their habits. All these were undoubtedly obtained in the vicinity of Bartram's Garden, and were the type specimens of the following species described and figured by Edwards and duly named by Linnæus, Gmelin or Latham.

It will be noticed that many of our vernacular names for these birds originated with Edwards or were communicated to him by William Bartram:

SPOTTED SANDPIPER, *Actitis macularia* (Linn.). "Spotted Tringa" sent by William Bartram.

RUFFED GROUSE, *Bonasa umbellus* (Linn.). "Ruffed Heathcock or Grouse" sent from Pennsylvania by John Bartram to Peter Collinson on July 15, 1750.

WHITE-THROATED SPARROW, *Zonotrichia albicollis* (Gmel.). Received from William Bartram under the above name with a carefully-colored drawing.

WORM-EATING WARBLER, *Helminthos vermivorus* (Gmel.). "The Worm-eater" from William Bartram.

GOLDEN-WINGED WARBLER, *Helminthophila chrysoptera* (Linn.). "The Golden-winged Flycatcher" from William Bartram.

BLUE-WINGED WARBLER, *Helminthophila pinus* (Linn.). Thought by Edwards to be the Pine Creeper of Catesby. Our present vernacular name seems to have originated with Wilson.

BLACK-THROATED GREEN WARBLER, *Dendroica virens* (Gmel.). "The Black-throated Green Flycatcher" received from William Bartram.

CHESTNUT-SIDED WARBLER, *Dendroica pensylvanica* (Linn.). "The Red-throated Flycatcher" received from William Bartram.

MYRTLE WARBLER, *Dendroica coronata* (Linn.). "The Golden-crowned" Flycatcher received from William Bartram. The name *coronata* is evidently derived from Edwards' vernacular name.

MAGNOLIA WARBLER, *Dendroica maculosa* (Gmel.). "The Yellow-rumped Flycatcher," a bird in the first-year autumnal plumage received from William Bartram.

TIT LARK, *Anthus pensilvanicus* (Lath.). "The Lark of Pennsylvania" received from William Bartram. Latham was the first to found a binomial name upon this plate.

GNATCATCHER, *Polioptila coerulca* (Linn.). "The Little Blue-gray Flycatcher" received from William Bartram along with nests, the bird being then a regular breeder near Philadelphia.

RUBY-CROWNED KNIGHT, *Regulus calendula* (Linn.). Bartram sent both the "Ruby-crowned" and "Golden-crested Wrens" and Edwards figured both, but while he recognized the former as a new species, the latter was considered identical with the European species for many years.

No name has so thoroughly impressed itself on American Ornithology as that of Alexander Wilson. His work was, in the main, carried on in the neighborhood of Philadelphia and many of his "types" were secured in this vicinity. Of all the species, the types of which were secured in eastern Pennsylvania and New Jersey, not less than twenty-three have Wilson's name affixed to them, and several more are closely identified with him.

Wilson very generally speaks of the locality where he secured a new bird and when such a definite statement is not made we are justified in regarding the vicinity of Philadelphia as *locus avis novæ*.

The following list includes those species that were described from Eastern Pennsylvania and New Jersey by Wilson or his friend George Ord, who edited the last volumes of Wilson's Ornithology, and later editions of the work :

BOXAPARTE'S GULL, *Larus philadelphia* (Ord.). This species

was first described in Guthrie's Geography under the name Banded-tail Tern, *Sterna philadelphia*. It was evidently captured in this vicinity, as the specific name would indicate.

RING-BILLED GULL, *Larus delawarensis* (Ord). Described as the Toothed-bill Gull by Ord in Guthrie's Geography. In a foot-note he adds: "This is a beautiful Gull, and was discovered on the Delaware below Philadelphia."

CANVAS-BACK DUCK, *Aythya valisineria* (Wils.). This duck is first described by Wilson as a distinct species under the name *Anas valisineria*.* With a reference to a Peale's Museum specimen, a lengthy description of the bird and its habits follows: American Ornithology, vol. viii, p. 103. The type may have come from the near-by Chesapeake, but I have included it in this list, for Wilson speaks of a pair which he bought in the Philadelphia market which had been shot at Egg Harbor, N. J.

RUDDY DUCK, *Erismatura rubida* (Wils.). "This very rare Duck was shot some years ago on the river Delaware, and appears to be an entire new species. The specimen here figured, with the female that accompanies it, and which was killed in the same river, are the only individuals of their kind I have met with. They are both preserved in the superb museum of my much-respected friend, Mr. Peale of this city." American Ornithology, vol. viii, p. 128.

LONG-BILLED CURLEW, *Numenius longirostris* (Wils.). This bird is first clearly distinguished by Wilson as a distinct species from the European Curlew. "The Curlews appear in the salt marshes of New Jersey about the middle of May on their way to the north, and in September on their return from their breeding places." American Ornithology, vol. viii, p. 23.

WILSON'S SNIPE, *Gallinago delicata* (Ord). Wilson did not clearly distinguish this bird as a distinct species from the common Snipe of Europe. He speaks of its arrival in Pennsylvania and its frequenting the low grounds along the Delaware and Schuylkill. Ord recognized it as a distinct species from the

* As Dr. Trotter points out, Wilson consistently misspells this word, and if we are to follow original spellings to the extent of "*pensilvanica*" and "*hiemalis*," it would seem that we must follow the habit of the duck and swallow our *valisineria* even though it be with less of a relish than he experiences.—W. S.

European Snipe, as is attested in vol. ix of the American Ornithology, 1825 edition. The original description given by Wilson was undoubtedly taken from a bird shot in this vicinity.

SOLITARY SANDPIPER, *Helodromas solitarius* (Wils.). "This new species inhabits the watery solitudes of our highest mountains during the summer, from Kentucky to New York; * * * * At the approach of cold weather it descends to the muddy shores of our large rivers, * * * * I have made long and close search for the nest of this bird without success. They regularly breed on Pocono Mountain, between Easton and Wilkes-Barre, in Pennsylvania, arriving there early in May, and departing in September." American Ornithology, vol. vii, p. 53, Peale's Museum, No. 7763.

PIPING PLOVER, *Ægialitis meloda* (Ord). This species was described by Wilson in vol. v, American Ornithology, p. 30, under the name of Ringed Plover, *Charadrius hiaticula*, confusing it with another species and regarding it as a different plumage phase. He records the bird from "Summer's" Beach, at the mouth of Great Egg Harbour, N. J.

In vol. vii, p. 65, under the account of the Ring Plover, Wilson refers to the mistake in confusing the two. He further says: "The present species, or true Ring Plover, and also the former (referring to the Piping Plover described and figured in vol. v as above quoted), both arrive on the seacoast of New Jersey late in April." Ord named the bird in the reprint of Vol. VII, 1824.

WILSON'S PLOVER, *Ægialitis wilsonia* (Ord). "Of this neat and prettily-marked species I can find no account, and have concluded that it has hitherto escaped the eye of the naturalist. The bird of which the figure in the plate is a correct resemblance was shot the 13th of May, 1813 on the shore of Cape Island, New Jersey, by my ever-regretted friend, and I have honored it with his name." Ord in vol. ix, American Ornithology, p. 77.

SEMPALMATED PLOVER, *Ægialitis semipalmata* (Bp.). Wilson figures and describes the Ringed Plover in vol. vii of the American Ornithology as previously noted under the specific name *hiaticula* which is that of the European form. Bonaparte first recognized it as a distinct species and so records the fact in the

Journal of the Academy of Natural Sciences of Philadelphia, vol. v, p. 98, giving it the name *semipalmata*.

KING RAIL, *Rallus elegans* (Aud.). Wilson figures this species under the description of the Clapper Rail, *R. crepitans*. Audubon recognized the error, and names the bird as distinct in a most patronizing paragraph. Wilson evidently confused the two as one and the same species, saying, "Though occasionally found along the swampy shores and tide waters of our large rivers, its principal residence is in the salt marshes."

Audubon refers to the bird as breeding in the salt meadows along the Delaware and Schuylkill, where Wilson most likely obtained the specimen from which he made his drawing, probably the Peale's Museum specimen which he quotes. American Ornithology, vol. vii, p. 112, plate 62.

GOSHAWK, *Astur atricapillus* (Wils.). The specimen figured and described was "shot within a few miles of Philadelphia." American Ornithology, vi, p. 80.

SHARP-SHINNED HAWK, *Accipiter velox* (Wils.). Wilson says, "This Hawk was shot on the banks of the Schuylkill near Mr. Bartram's. Its singularity of flight surprised me long before I succeeded in procuring it." American Ornithology, v, p. 116. Under the name of *Falco pennsylvanicus*, or Slate-colored Hawk, he described "a beautiful specimen shot in the neighborhood of Philadelphia." American Ornithology, vi, p. 13. This, as he suspected, proved to be the adult plumage of the former.

BROAD-WINGED HAWK, *Buteo platypterus* (Viell.). Referring to plate 54, vol. vi, of the American Ornithology, Wilson speaks of this Hawk as a *new species*, "shot on the 6th of May in Mr. Bartram's woods, near the Schuylkill, and was afterwards presented to Mr. Peale, in whose collection it now remains."

Another was seen the next day sailing about over the same woods, but was driven off by a Kingbird, much to the ornithologist's regret. The specimen secured was a male, and is now in the collection of the Academy of Natural Sciences, Philadelphia. Wilson named the Broadwing *Falco pennsylvanicus*, a name that he had already bestowed upon the adult Sharp-shinned Hawk. In his reprint of Wilson's work Ord substitutes the specific name *lutissimus*, while Vieillot, a French ornithologist, proposed *platypterus*. The latter has priority.

BLACK-BILLED CUCKOO, *Coccyzus erythrophthalmus* (Wils.). This species was first described by Wilson, vol. iv, p. 16, as a distinct species, and though he does not mention any locality, it is highly probable that the type specimen was obtained near Philadelphia. He refers also to a Peale's Museum specimen.

Vol. iv of the American Ornithology was issued in 1811. The preface to this volume contains a very interesting account of the different species of birds found nesting in Bartram's Garden, and also notes on the arrivals of certain species.

WHIP-POOR-WILL, *Antrostomus vociferus* (Wils.). "Though this noted bird has been so frequently mentioned by name, and its manners taken notice of by almost every naturalist who has written on our birds, yet personally it has never yet been described by any writer with whose works I am acquainted. Extraordinary as this may seem, it is nevertheless true; and in proof I offer the following facts." American Ornithology, vol. v, p. 78.

FISH CROW, *Corvus ossifragus* (Wils.). In his description Wilson says that a pair bred in a piece of tall woods near Mr. Beasley's at Great Egg Harbor. "The male of this nest furnished me with the figure in the plate." American Ornithology, v, p. 27.

PINE SISKIN, *Spinus pinus* (Wils.). American Ornithology, vol. ii, p. 133. The type undoubtedly from this locality. Wilson speaks of it as visiting us in November, and of the large flocks that frequented the gardens of Bush Hill in the neighborhood of Philadelphia. He makes no mention of having observed it elsewhere.

CHIPPING SPARROW, *Spizella socialis* (Wils.). American Ornithology, vol. ii, p. 127. The type undoubtedly from this vicinity. Bartram calls it "*Passer domesticus*, the little House Sparrow or Chipping-bird." The bird was so common that Wilson, though its first biographer and namer, makes no mention of it as a novelty.

FIELD SPARROW, *Spizella pusilla* (Wils.). First described by Wilson in vol. ii, p. 121, American Ornithology, though listed by Bartram as *Passer agrestis*. Evidently the type was obtained in this vicinity. Wilson speaks of it as generally migratory in Pennsylvania, and further adds that "it has no song;

but a kind of chirping not much different from the chirpings of a cricket." This is a curious statement, for to me in its plaintive song there is all of the charm and sweetness of the budding borders of April woods. John Burroughs' name of Bush Sparrow seems quite as applicable to this species as Wilson's name of Field Sparrow.

SONG SPARROW, *Melospiza cinerea melodia* (Wils.). No definite locality is given, it being such a common species that Wilson could not be sure that it was not already described.

GRASSHOPPER SPARROW, *Coturniculus sasanarrum passerinus* (Wils.). This species he found at Staten Island and along the seacoast of New Jersey, but is not explicit as to the type locality.

SAVANNA SPARROW, *Passerculus sandw. savanna* (Wils.) is described at length in vol. iii, American Ornithology, the figure being that of the female. From Wilson's account it was evidently named by him after the city of Savannah, and the name is so spelled. He speaks of having first discovered it there, and later having found it abundant near Great Egg Harbor, N. J., where he evidently obtained the Ipswich, or as he supposed, the male Savanna Sparrow.* While not the type, Wilson's specimen was evidently the first obtained.

SEASIDE SPARROW, *Ammodramus maritimus* (Wils.). In vol. iv, plate 34, American Ornithology, Wilson figures this bird and says, "Of this bird I can find no description. It inhabits the low, rush-covered islands along our Atlantic coast, where I first found it." It is altogether likely that he first met with this sparrow on the New Jersey marshes, possibly in the vicinity of Great Egg Harbor, where he did much collecting and where the bird is common.

SOLITARY VIREO, *Vireo solitarius* (Wils.). Under the name of Solitary Flycatcher, *Muscicopa solitaria*, Wilson describes this bird in vol. ii, American Ornithology, p. 143, and says, "The one from which the figure in the plate was taken was shot in Mr. Bartram's woods near Philadelphia, among the branches of a dogwood, in the month of October."

CERULEAN WARBLER, *Dendroica caerulea* (Wils.). The type undoubtedly from this neighborhood. In vol. ii, American Orni-

* Cf. Stone, *Osprey*.

thology, p. 141, Wilson says, "This delicate little species is now, for the first time, introduced to public notice. Except my friend Mr. Peale, I know of no other naturalist who seems to have hitherto known of its existence." He further adds, "It is one of our scarce birds in Pennsylvania, and its nest has hitherto eluded my search. I have never observed it after the 20th of August."

BAY-BREASTED WARBLER, *Dendroica castanea* (Wils.). This species was listed by Bartram under the name of *Parus peregrinus*, the Little Chocolate-breasted Titmouse. Wilson first described it as *Sylvia castanea*, giving to it its present English name. He speaks of it as a very rare species, passing through Pennsylvania about the beginning of May. The type was evidently obtained in this vicinity. American Ornithology, vol. ii, p. 97.

MOURNING WARBLER, *Geothlypis philadelphia* (Wils.). In vol. ii, page 101 of the American Ornithology, Wilson says, "I have the honor of introducing to the notice of naturalists and others a very modest and neat little species which has hitherto eluded their research. I must also add, with regret, that it is the only one of its kind I have yet met with. The bird from which the figure in the plate was taken was shot in the early part of June, on the border of a marsh, within a few miles of Philadelphia."

LONG-BILLED MARSH WREN, *Telmatorhytes palustris* (Wils.). Under the name *Certhia palustris*, Wilson describes this little bird in vol. ii, p. 58 of the American Ornithology. He speaks of its arrival in Pennsylvania and also of its curious song heard "on the reedy borders of the Schuylkill or Delaware in the month of June."

WILSON'S THRUSH, *Hylocichla fuscescens* (Steph.). Wilson first clearly distinguished this species from the Wood and Hermit Thrushes, but unfortunately selected a name, *Turdus mustelinus*, which had already been bestowed upon the Wood Thrush by Gmelin. Bonaparte renamed Wilson's bird *T. wilsoni*, and Stephens, *T. fuscescens*, the latter having priority.

SMALL-HEADED FLYCATCHER, *Muscicapa minuta* (Wils.). This species, not since detected and the basis of Audubon's attack on Wilson and Ord's countercharge, is stated by the latter to have been secured by Wilson near Philadelphia.

Besides the foregoing, Wilson described a number of supposed novelties from the neighborhood of Philadelphia, such as the Bartramian Sandpiper, Black Hawk, Nighthawk, Crossbill, Swamp Sparrow, Tree Swallow, Warbling and Yellow-throated Vireos, Cape May Warbler and Water Thrush; and while Philadelphia remains the type locality for the names he proposed, these have become mere synonyms of names proposed by others a few years earlier in works to which Wilson had not access. Many of his vernacular names, however, such as Cape May Warbler, Swamp Sparrow, etc., still persist.

Of the discovery of the former, he says "obtained in a maple swamp in Cape May Co., not far from the coast, by Mr. George Ord." The earlier specimen figured by Edwards and named by Gmelin came on to a vessel at sea "ten leagues off the Florida coast," a much less satisfactory type locality! Of the Bartramian Sandpiper, he says: "This bird being, as far as I can discover, a new species, undescribed by any former author, I have honored it with the name of my very worthy friend, near whose botanic gardens, on the banks of the river Schuylkill, I first found it."

A number of other names proposed by Wilson were for birds that he well knew had been described before, but not realizing the force of the rule of priority, he felt at liberty to rename any species whose earlier appellations did not suit his taste. Generally, however, Wilson took these names from Bartram's manuscript or from his "Travels" in an attempt to force into use the names proposed by his friend and counsellor, who was undoubtedly the first to discover a large number of our birds, but who unfortunately published no descriptions of them, even though he coined names for them.

Bonaparte apparently named but one new species from our district, namely, the

STILT SANDPIPER, *Micropalma himantopus* (Bonap.). In a paper read Nov. 6, 1826, before the New York Lyceum, and published in the "Annals" of that society, vol. ii, p. 157, he says: "This new species I shot from a flock at Long Branch, N. J., in the middle of July." This clearly gives the bird a title to a place as a type species from this region. I have heard this species called Bonaparte Snipe on Long Island.

BARRED OWL, *Syrnium varium* (Barton) obviously from Philadelphia. Barton, in his curious "Fragments of Natural History," names it as new.

Wilson had so thoroughly scoured Pennsylvania that but little was left for Audubon to discover in this neighborhood, and we find most of his novelties described from the south or west. There are, however, the following:

PINE WARBLER, *Dendroica vigorsii* (Aud.). This is the *Sylvia vigorsii* of Audubon obtained on the Perkiomen Creek. The bird was known before, but none of the older names are available.

TRUDEAU'S TERN, *Sterna trudeaui* (Aud.). Obtained at Great Egg Harbor, N. J. A pure straggler from the south.

CUVIER'S KINGLET, *Regulus cuvieri* (Aud.). Fatland Ford, Schuylkill River, June 8, 1812. This unique bird was not preserved, and the like of it no one else ever saw.

TOWNSEND'S BUNTINO, *Emberiza townsendii* (Aud.). New Garden, Chester Co., Pa. A probable hybrid. The unique type is still preserved in the National Museum.

Since the time of Audubon but three new birds have been discovered in eastern Pennsylvania. These are as follows:

PHILADELPHIA VIREO, *Vireo philadelphicus* (Cassin). Type secured by John Cassin, September, 1842, in Bingham's Woods, where Horticultural Hall now stands in West Fairmount Park, Philadelphia. See Proceedings of the Academy of Natural Sciences, Philadelphia, v, Feb., 1851.

LEAST FLYCATCHER, *Empidonax minimus* (Baird).

YELLOW-BELLIED FLYCATCHER, *Empidonax flaviventris* (Baird).

Both obtained at Carlisle, Pa., by Wm. M. and Spencer F. Baird, and described by them in the Proceedings of the Philadelphia Academy, July, 1843.

Bird Life of the Indian River Country of Delaware

BY CHARLES J. PENNOCK

The Indian River region of Delaware forms a considerable area in the southeastern part of the State. It includes the basin of the Indian River, Rehoboth Bay, and Indian River Bay, the last two being respectively the north and south arms of a single body of water with a common opening to the sea, known as Indian River Inlet. The area as a whole comprises about twenty-five miles of the Atlantic seaboard. The country bordering the bays is settled farm land with large bodies of timber interspersed, consisting of pine, sweet gum, several species of oak, swamp magnolia and laurel, while a few cypress trees are still to be seen on the upper waters of the Indian river.

I. MILLSBORO

My first visit to this country was in company with Mr. S. N. Rhoads late in October, 1903, and our headquarters were at Millsboro, a hamlet of about five hundred inhabitants situated on the Indian River about eight miles from the bay. There is a dam here which supplies power to a flour and feed mill on the opposite side of the stream from the village. The river proper really begins below the dam, and for the first half-mile is barely wide enough to allow of the passage of a small steam launch used for towing lumber barges from the sawmills along the shores. It is quite winding as it nears the bay, and on one side or the other is usually lined by extensive marshes, while there are frequent tracts of timber. An occasional fisherman has his primitive-looking home near the bank, with his nets hanging about. Our time was very limited on this occasion, and we saw but few birds.

On December 5-6, 1904, I was again at Millsboro. The

weather was cold, and birds extremely scarce. Twenty or thirty Redheads, some Ruddy Ducks and Old-squaws, a bunch of one hundred Scaup and a few Black Ducks, and in the dim distance what were said to be Geese comprised all the game birds observed. Pied-billed and Horned Grebes were abundant, and a single Holboell's Grebe was seen.

The evening of May 12, 1905, found me again at Millsboro, prepared this time to learn something of the bird life of this region, which I had hitherto seen only at unfavorable seasons. I set out early the following morning in a gasoline launch, headed down the bay.

House Wrens and Baltimore Orioles were especially abundant in the village, and the Oriole was frequently heard later in the adjacent country. Blackpoll Warblers had not reached Kennett Square, Pa., when I left home, but were singing here near the boat landing. When I landed, two or three miles down the river, I saw a flock of Least Sandpipers and what I took for Lesser Yellowlegs.

A new song was heard among some bushes at the border of the marsh, and pushing my way through to an opening in the thicket, I was able to collect my first Henslow's Sparrow. I have seen this bird in New Castle County, but not in the nesting or singing season. To me the note resembles more the words "switch 'em," "switch 'em," than the "amen" of Mr. Rhoads' paper.* Farther down the bay a Bald Eagle was being persecuted by a Crow, and a Loon flew so close to the boat that I could clearly distinguish the markings on his neck. On visiting a pool in the marsh I flushed a Solitary Sandpiper and a drake Black Duck. An earlier interview with some other "ornithologist" had somewhat impaired his activity, else his red legs would no doubt have long since been paddling in more northern climes. Next day, however, I saw a pair of Black Ducks swimming confidently together, and have no doubt they intended to remain and nest in this locality, but I presume their legs were dark.

Down near the "inlet," or more properly, the outlet of In-

* CASSINIA, 1902, p. 6.

dian River and Rehoboth Bays, we went ashore for an hour or so. The beach was birdless, but back on the marsh a quarter of a mile we found numbers of Least Sandpipers and a few Greater Yellowlegs, while on a dry, sandy waste was a single male Bobolink, not a common species so close along the shore.

A Fish Hawk's nest, to which I climbed, contained three eggs, and halfway up its side, well secured among the coarse sticks, boards and corn stalks was a bulky nest of the Purple Grackle with five eggs. We ran our boat up the unfinished canal that was to have joined Rehoboth Bay with Delaware Bay near Lewes, tied up and spent the night lulled to sleep by the monotonous calls of the Whip-poor-wills. Early the following morning I strolled to a near-by wood. Tufted Titmice, Pine Warblers and Ovenbirds were there; and I detected an apparently familiar fine-spun but elusive note in the tree tops that puzzled me, but after sometime I caught sight of a pair of Cerulean Warblers very actively searching for food among the branches—my old friends of the Choptank bottom.* A Cardinal's nest containing one egg of the owner and two of the Cowbird was also found.

We were off at 8.15 o'clock for the bay. Numerous Fish Hawks were seen flying about, and several nests were in sight. One old bird was carrying material for repairing a nest, and we had a good view of his manner of grasping it. He was carrying what seemed to be a piece of reed or weed two feet long, with considerable brush at the end. It was held lengthwise in the direction of the bird's flight, and grasped by both feet one well in advance of the other, and both legs apparently extended downward to about their full length, so that the load was clear of the body, but offered little resistance to flight. We visited several nests of the Fish Hawk, one in a persimmon bush right up among the small branches, which seemed too light to support such a weight; another in a fork of a good-sized oak standing alone by the water was easily reached from the top of a wire fence. Another nest was sixty feet up on a tall almost dead tree supported by a single limb, and still another had been placed on the roof of a deserted house supported on the ruins of the crumbling chimney. This one had, however, been

* See THE AUK, 1905, p. 194.

blown down. As far as examined the nests contained three eggs and three at least had Purple Grackles nesting in their sides.

A pair of Night Hawks were flushed from a plowed field, and first one and then the other would fly a few feet and silently float back to the ground. We could approach within ten feet as they sat on a clod. There was a marked difference in the brilliancy of their plumage. Going back to the launch, I rested while the crew rowed off to a bar to dig some clams. In an hour they returned quite excited over two white birds that had "growled" or "snarled" at them as they passed a mud flat. Returning with them I found a dozen Greater Yellowlegs, a flock of Least Sandpipers and some undetermined Sandpipers, along with the white birds which proved to be Forster's Terns.

The morning of May 15th I drove a few miles back into the country. Here I saw and heard several Prairie Warblers in a rather open pine clearing. A Summer Tanager flew across the road ahead of my team, and I saw a single Mockingbird. Redstarts and Black-and-white Warblers and Vesper Sparrows were also noted, the last named apparently not a common bird in lower Sussex County.

Several Henslow's Sparrows were seen in an open clearing — part of an old cypress swamp as laid down on ancient maps of the district. As we returned I noted the only Blue-gray Gnat-catcher of the trip.

My entire list observed at Millsboro on this trip was seventy-three. All of these would seem to be breeders in this vicinity except the Loon, Least Sandpiper, Greater Yellowlegs, Black-poll Warbler, Wilson's Thrush and possibly the Redstart which, however, passes the summer in the Choptank river-bottom on the western border of the state and may breed here also.

Among the species observed along the bay, and not previously mentioned, were the Sharp-tailed and Seaside Finches, Fish Crow and Bittern.

The scarcity of littoral species was noticeable, but I am confident that the locality is a good one for "beach birds" on favorable days, as it is the first landing place for birds that cross Delaware Bay from the New Jersey coast.

II. SOUTH SHORE OF INDIAN RIVER BAY

Ever since I began my field studies of Delaware birds I have had in mind the strip of ocean front at the southeast corner of the State as being an out-of-the-way locality, with possibilities in the way of good bird records. As Ocean View seemed to be the only town marked on my map as located in that region, I have always kept that name before me as a basis for operations. I could find no one who had ever been to Ocean View or who knew aught of the country thereabouts, which only served to add to the interest of the proposed trip. This section now to be considered lies directly south of that formerly described and extends to the Maryland line, about ten miles from Indian River Inlet.

The opportunity to visit this locality came in May, 1907, when, after an uncomfortable illness, I went for a breath of salt air and while not yet strong enough for hard tramping, my brief stay of a day and a half gave a glimpse of the bird life and a very fair idea of the character of the country and its ornithological possibilities which I do not hesitate to predict will prove when carefully worked out to equal all my fancy has pictured.

On the afternoon of May 19, 1907, I met my brother-in-law, a Philadelphia physician, on a train southward bound at Wilmington, Del., and about four hours later, or at 8:15, we were in a stage at Frankford, Del., a hundred miles south of Wilmington and but five or six miles from the southern Delaware state line.

We speculated *en route* as to the probable length of our carriage ride. I fancied it to be four or five miles, while the doctor maintained that from the map it should be seven or eight miles, and we were both a good deal surprised to learn from our driver, who met us by prior arrangement, that we had ten and a half miles to drive to reach Ocean View, and as the mistress of the only house in that hamlet where strangers were entertained was now ill, we were to go on a mile and a half farther to Cedar Grove Park. As our train had just kept ahead of a threatening thunder squall for the last hour and the clouds were still massed off to the northward, there was some uneasiness on the part of one member of the party at least. However, we had a right

good span of horses, and the driver evidently was afraid of thunder, so we bowled along in good style and at 9:30 swung into Ocean View. Here we waited nearly an hour for the storm to drift farther away, but no rain coming, we finally persuaded our Jehu to carry us on to our final destination, and at 10:45 we drew up to Cedar Grove Park and were greatly surprised to find a most attractive hotel on a commanding knoll with the Indian River Bay on three sides, from north-east to west, and the Ocean two miles distant across the marsh to the east and south-east, while Henlopen light flared up twelve to fifteen miles north of us. We were not expected at so late an hour and had some difficulty in arousing mine host, but his welcome was genuine, and very soon the distant sound of the surf served as a lullaby, and sandy roads, thunder and lightning, the crack of a whip and the query, "Will it rain?" faded away to be replaced sometime later by a faint far-away impression of unusual and strangely-mixed sounds; and then gradually a consciousness that something said "honk-honk-konk" and something else said "tseep-chip."

Finally, when self could assert itself and the watch said 4:30 a. m., a glance out the east window discovered a Chestnut-sided Warbler in a wild cherry tree close by the house, and two hundred yards distant in a quarter-acre pen, five Canada Geese ranging at will and accompanied by several Black Ducks and Mallards. As I dressed the sun rested on the ocean a big red ball, the salt marshes were green with the fresh new grass, the waters of the bay were sparkling, the distant voice of the ocean was almost hushed, and I felt that the south shore of Indian River Bay was a veritable "Point of Paradise," as this region was named by the early Swedish settlers.

I thought to take my gun and steal out for a walk alone without disturbing the doctor, but he also had heard the Wild Geese, and was ready for a two hours' tramp before breakfast. My health would not permit any vigorous operations, and we did not wander far from our home, but strolled across a quarter mile of open salt-marsh, down along a tidal cove, up through a beautiful piece of open oak woods, across an old field grown up somewhat with pine saplings, sedge grass and weeds, and on

down the sandy road to the rear of our hotel, and through the pretty grove to our breakfast.

I do not propose tiring you with the list of species seen on our walk. They numbered thirty-nine positively identified, and three Warblers not recognized. I do not of course include the empounded Geese and Ducks. Down by the Cove, Fish Hawks were flying, and several nests were seen during the walk. Fish Crows were feeding, and as I passed along the edge of the oak woods one flew from a nest in the top of a small cedar tree, about fifteen feet up, and I took along the set of four perfectly fresh eggs. Do they usually nest later than the larger species? I collected a set near Lewes several years ago about the same date and quite fresh. A pair of Greater Yellowlegs whistled well out over the water, and bending low on the open marsh I whistled them up until one paid the penalty of his curiosity. I had noticed some small Ducks drifting up in the Cove, and quietly walked up within two hundred yards of a bunch of thirty-two Ruddy's, so close I could see the head markings and short spiny tails.

Seaside Sparrows were quite abundant on this marsh and I noted how few were the Sharp-tailed species, but later in the day, out on the marsh near the ocean, the two species were about equally abundant and both in full song. Several small bunches of Least Sandpipers went skimming over the short grass and alighted for an early lunch on a bare mud flat. Towhees and Red-eyed Vireos were singing as I investigated the contents of the Fish Crow's nest, and a pair of Fish Hawks protested seriously as I passed under the old gnarled and almost dead oak that stood out alone near the edge of the woods exposed to the damp winds from across the bay. I have never yet been fully satisfied with an explanation of the dying tree containing the nest of the Osprey. I suspect the bulky mass of decaying vegetable matter may be the main factor. Seaweed, corn-stalks, grass and decaying wood of the usual large bulk, up among the smaller branches, I think, might well make trouble with the vitality of a healthy tree. As we watched the old Ospreys, the doctor told me of his having watched an Eagle secure his breakfast by robbing the Fish Hawk. The Eagle

performed the usual upward spiral flight forcing the Osprey higher and higher and always sliding under the upper bird as it would attempt to escape. Finally the Hawk, concluding that further effort at escape was useless, dropped his fish, and as the doctor expressed it, seemed to say to the Eagle, "Well, here it is," and passed it down to the waiting bird who turned on his side and seized it with his feet as it came along. In talking this over later in the presence of our landlord he stated that he had noticed that under similar circumstances the Eagle never followed directly down upon the fish but dropped below it and turned over to seize it as it came to him.

Leaving the Fish Hawk's nest, we gained the road at the top of a sandy ridge and walked along through the oak woods, seeing and hearing numerous familiar species. A few Redstarts yet remained, and several House Wrens were singing merrily in the woods. The following day we heard them in another wood, and I recalled that at Lewes, several years previous, I had found this bird in similar situations. Coming out into the open field, several Henslow's Sparrows were calling "switch it," their notes having a decided ventriloquial effect, or at least seemed to come from much nearer at hand than they really did.

After doing justice to an excellent breakfast, we inspected the grounds about the hotel and chatted with a gunner who landed nearby after an early trip to the marshes where he had bagged seven Greater Yellowlegs over decoys. He showed us his semi-domesticated Black Duck sitting under a bunch of grass, close under a tree containing a Fish Hawk's nest, forty or fifty feet back from the bay shore. He thought she was covering eleven or twelve eggs, but she did not seem disturbed at our presence. The drake and another duck were swimming out on the bay. The gunner told us of the unusual abundance last spring of Curlews, which from his description were, I judged, Hudsonian Godwits, and I saw a pair of that species at Rehoboth about the middle of May, 1906.

Shirt-tailer seems to be the vernacular for the Red-headed Woodpecker here as well as about Millsboro, where Mr. Rhoads and I first heard it. Scroggin and Flying Fox are names for the Bittern, although the former name may apply to a Heron,

possibly an immature Night Heron. Going out to examine the Geese, I found the old pair had built a nest of grass close by the three-foot board fence. It was on the dry ground, quite a bulky affair, two feet across at the base and nearly a foot high. As I walked around in the direction of the nest the old gander, who seemed to stand sentinel on the bank fifty yards away, slid off into the water, swam to his mate, and met me with outstretched neck and wide-open mouth. I kept the fence between us, and he stood beside the nest hissing at me and calling out with a loud mellow note and frequently biting and pulling at the old goose as if to urge her to leave. She finally stood up, showing five eggs, but gave no indication of any intention to retreat. Both birds had a downward swinging motion of the head and neck, not rapid, but frequently repeated, that brought the throat in touch with the breast, then the head was quickly raised again to about the full extent of the neck and the "honk konk" was uttered, or I was derided with a "hiss." The pen contained three other Canada Geese that kept together, well off from the nest, and I was told that the old gander did not allow them nor the Wild Ducks to approach the nesting bird. These other three Geese had been reared by the same pair of old birds, the year previous, in this same pen. So far as I could note they were full-grown birds in adult plumage, but it was the opinion there that they will not breed until their third year. Five eggs had been the set of the previous year, four of which had hatched, but one of the goslings had early met with a fatal accident. We were told that wild geese frequently came down and rested in this pen, attracted by the imprisoned birds that were kept in bounds by occasionally shortening the primaries.

After dinner we took a twenty-five foot gasoline launch and went out to the inlet, two and a half miles distant as the Crow flies, but by channel lengthened to seven or eight miles. The doctor and our boatman tried the fishing, first in the "dreen" as our friends called the narrow tidal creek, and later went out on the ocean front and cast for rock fish, while I beat the marshes half a mile back from the ocean. Bird life here was not very rich in species. Cover, except for a few small bushes, was wanting, the season was backward, and the grass and reeds

had made but little growth. Both of the tidal sparrows were plentiful. The Seaside Sparrows were singing, and I found a nest under construction that I concluded was of that bird. It was about eighteen inches up from the ground and attached to the stems of some reeds or coarse grass of a previous year's growth. A single Marsh Hawk came quartering over the meadows, whirling and dropping suddenly when some attractive bit caught his eye. I needed a specimen of a Clapper Rail, and spent a good deal of time beating the borders of the smaller creeks for a long time without success. I had about decided to give it up and go over to the sand dunes and beach when as I passed around the end of a small creek one flushed from my feet, and was secured.

I found few birds on the beach, which was separated from the grassy marsh by a sand dune in places fifteen to twenty feet high, cut through in many places by wind and tide. Barn Swallows were numerous. I saw a few Bank Swallows and one or two Tree Swallows, and right at the inlet, which is not over two hundred yards across, and the only opening for the broad waters of Rehoboth and Indian River Bays, I counted thirty-five Ospreys busily fishing. Occasionally one would go off inland with a load, or another would alight on shore, back a short distance inland to lunch. The poles of the telephone line connecting the two nearest life-saving stations seemed to be favorite resting-places in the absence of trees. My companions were on the opposite side of the inlet, and as I walked back to meet the boat they were sending for me, I saw a flock of ten or more Red-breasted Mergansers, and the next morning early two of the larger species of Merganser flew over me at very close range. The date seemed rather late, I thought. Several Solitary and numerous Spotted Sandpipers were feeding along the margins of the stream, the former singly, the other in small bunches. Several flocks of Least Sandpipers were seen, and a bunch of eight or ten of an unidentified Sandpiper went by out of range.

As I watched the fishermen, two Black-headed Gulls went up the coast well out to sea. They seemed intent on going northward, and kept their course steadily. Our boatmen were not familiar with them as nesting thereabouts, and I saw no others and no Terns. This was the immediate locality where I shot the Forster's Tern two years previously.

As we returned homeward we raised a pair of Black Ducks close in-shore, as we followed the channel by an island. These birds must nest commonly throughout the State, both on the salt and fresh marshes, as I have seen them frequently in pairs or singly in May and June from Rehoboth to Odessa. A single Night Hawk was hunting his supper overhead as we tied up to the dock at seven o'clock. We heard no Whip-poor-wills on this trip, but they are reported as abundant, and as stated I have heard them on the north shore of the bay back of Rehoboth.

After supper we chatted with our two boatmen, who were both ardent gunners. One a lad of under twenty had shot a Swan the previous winter, but they both said these birds were extremely rare thereabouts and only occasionally seen.

Brant or "Black Brant" as they call them are rather common, they told us, and White Brant are seen almost every winter, and are sometimes shot. I suppose this is the Greater Snow Goose, a species not abundant on the Atlantic coast north of Virginia, but which has previously been recorded from Delaware.

White-winged Coots and Buzzard Coots, which I take to be Scoters, are said to be more or less abundant during the colder weather. They recognize two forms of the Black Duck, and say the smaller or Nigger Black Duck occasionally nests with them, while the other, Red-paddle they style it, is larger, and never stops over to breed, which agrees entirely with the recognized habits of the two forms, I believe. Carrying out the plan made that evening, we were up and out at five o'clock next morning and walked to some fine tracts of pine timber near the south side of the bay. A strong, cold northwest wind continued all morning, and it proved a poor time to observe birds. Occasionally we found a sheltered nook, and noticed that a few Warblers yet lingered. Pine Warblers were singing and probably preparing to nest. Several Myrtle Warblers were seen, and an Indigo Bird and Scarlet Tanager were heard singing. A solitary Acadian Flycatcher and a pair of Ovenbirds were seen and heard. I was much disappointed that the cold wind continued, as this was our last chance to look up the birds, and in such weather there was not much to be seen. Com-

ing out into some farm land a pair of American Mergansers were seen at quite close range, evidently making a short cut from the ocean or a creek below to the bay back of the woods. They were so close we could see the form of bill and general markings. Along by an orchard we saw a pair of Kingbirds, and Orchard Orioles were singing merrily. After breakfast a few specimens were skinned, and then we found our time was up and we had to pack and make ready for our long drive to Frankford.

LIST OF BIRDS OBSERVED IN THE INDIAN RIVER REGION
DELAWARE *

Podilymbus podiceps, Pied-billed Grebe. M., Oct. (20); Dec., 1904 (2).

Colymbus auritus, Horned Grebe. M., Oct., 1903 (sev.); Oct., 1904 (2).

Colymbus holboëlli, Holboell's Grebe. M., Dec., 1904.

Gavia imber, Loon. M., Oct., 1903 (2); Oct., 1904 (sev.).

Larus argentatus, Herring Gull. M., Oct., 1903 (sev.); Oct. (30) and Dec., 1904 (25).

Larus atricilla, Laughing Gull. O. V.

Larus philadelphia, Bonaparte's Gull. M., Oct., 1903 (6); Oct., 1904 (3).

Sterna forsteri, Forster's Tern. M., May, 1905 (2).

Anas boschas, Mallard. M., Dec., 1904 (6).

Anas obscura, Black Duck. M., Dec., 1904 (5); May, 1905 (2); O. V.

Anas obs. rubripes, Red-legged Black Duck. M., May, 1905.

Aix sponsa, Wood Duck. M., Oct., 1903 (30).

Aythya americana, Redhead. M., Oct. (3); Dec., 1904 (10).

Aythya marila, Scaup Duck. M., Oct., 1903 (100); Oct., 1904 (sev.).

Charitonetta albeola, Bufflehead. M., Oct., 1903 (2).

* M=Millsboro. Dates of trips, Oct. 30, 1903 (17 species noted); Oct. 28, 1904 (23 species); Dec. 5-6, 1904 (14 species); May 13-15, 1905 (73 species). O. V.=Ocean View. May 19-20, 1907 (67 species). Single birds noted at Millsboro except where numbers are added in parenthesis. Relative abundance of species seen at Ocean View may be ascertained from text. Total species observed, 112.

- Clangula hyemalis*, Oldsquaw. M., Oct., 1904.
- Erismatura jamaicensis*, Ruddy Duck. M., Oct., 1903 (sev.); Oct. (20), Dec., 1904 (30); O. V.
- Merganser americanus*, American Merganser. M., May, 1905.
- Merganser serrator*, Red-breasted Merganser. M., Oct., 1903 (6); O. V.
- Botaurus lentiginosus*, American Bittern. M., May, 1905 (1).
- Ardea herodias*, Great Blue Heron. M., Dec., 1904 (1).
- Butorides virescens*, Green Heron. M., May, 1905 (2); O. V.
- Rallus crepitans*, Clapper Rail. O. V.
- Fulica americana*, American Coot. M., Oct., 1904 (3).
- Philohela minor*, Woodcock. M., May, 1905 (1).
- Tringa minutilla*, Least Sandpiper. O. V.; M., May, 1905.
- Totanus melanoleucus*, Greater Yellowlegs. M., May, 1905 (8); O. V.
- Totanus flavipes*, Yellowlegs. M., May, 1905 (3).
- Helodromas solitarius*, Solitary Sandpiper. M., May, 1905 (1), O. V.
- Actitis macularia*, Spotted Sandpiper. M., May, 1905 (3); O. V.
- Oxyechus vociferus*, Killdeer. M., Oct., 1903 (1); Oct., 1904 (12); O. V.
- Colinus virginianus*, Bobwhite. M., Oct., 1904 (12).
- Zenaidura macroura*, Dove. M., Oct., 1903 (1); Oct., 1904 (50); O. V.
- Cathartes aura*, Turkey Vulture. O. V., May, 1907; M.; May, 1905 (com.).
- Circus hudsonius*, Marsh Hawk. O. V., Oct., 1904 (1); O. V.
- Accipiter velox*, Sharp-shinned Hawk. M., Oct., 1904; May, 1905.
- Haliaeetus leucocephalus*, Bald Eagle. M., Oct., 1903; Oct. and Dec., 1904; May, 1905.
- Pandion haliaetus carolinensis*, Fish Hawk. M., May, 1905 (com.); O. V.
- Coccyzus americanus*, Yellow-billed Cuckoo. M., May, 1905; O. V.
- Ceryle alcyon*, Belted Kingfisher. M., Oct. and Dec., 1904; O. V.
- Melanerpes erythrocephalus*, Redheaded Woodpecker. M., May, 1905.

- Colaptes auratus luteus*, Flicker. M., May, 1905 (sev.); O. V.
Antrastomus vociferus, Whip-poor-will. M., May, 1905 (sev.).
Chordeiles virginianus, Nighthawk. M., May, 1905 (2); O. V.
Chactura pelagica, Chimney Swift. M., May, 1905 (abund.);
O. V.
Tyrannus tyrannus, Kingbird. M., May, 1905 (2); O. V.
Myiarchus crinitus, Crested Flycatcher. M., May, 1905 (sev.);
O. V.
Sayornis phæbe, Phæbe. M., May, 1905 (3).
Contopus virens, Wood Pewee. M., May, 1905 (sev.); O. V.
Empidonax virescens, Green-crested Flycatcher. M., May,
1905; O. V.
Cyanocitta cristata, Blue Jay. M., May, 1905 (sev.); O. V.
Corvus brachyrhynchos, Crow. M., May, 1905 (sev.); O. V.
Corvus ossifragus, Fish Crow. M., May, 1905 (sev.); O. V.
Dolichonyx oryzivorus, Bobolink. M., May, 1905. O. V.
Molothrus ater, Cowbird. M., May, 1905 (sev.); O. V.
Agelaius phoeniceus, Redwinged Blackbird. M., May, 1905
(com.); O. V.
Sturnella magna, Meadow Lark. M., May, 1905 (sev.); O. V.
Icterus spurius, Orchard Oriole. M., May, 1905 (4); O. V.
Icterus galbula, Baltimore Oriole. M., May, 1905 (sev.); O. V.
Quiscalus quiscula, Purple Grackle. M., Oct. (200), Dec.,
1904 (7); May, 1905; O. V.
Astragalinus tristis, Goldfinch. M., May, 1905 (sev.); O. V.
Poæetes gramineus, Vesper Sparrow. M., May, 1905 (3).
Zonotrichia albicollis, White-throated Sparrow. M., Oct., 1904
(sev.).
Coturniculus p. savannarum, Grasshopper Sparrow. O. V.
Ammodramus henslowi, Henslow's Sparrow. M., May, 1905
(3); O. V.
Ammodramus caudacutus, Sharp-tailed Sparrow. M., May,
1905 (sev.); O. V.
Ammodramus maritimus, Seaside Sparrow. M., May, 1905
(sev.); O. V.
Spizella socialis, Chipping Sparrow. M., May, 1905 (sev.);
O. V.
Spizella pusilla, Field Sparrow. M., May, 1905 (sev.); O. V.

Melospiza cinerea melodia, Song Sparrow. M., abundant; O. V.
Pipilo erythrophthalmus, Chewink. M., Oct., 1903 (1); O. V.
Cardinalis cardinalis, Cardinal. M., May, 1905 (2); O. V.
Passerina cyanea, Indigo Bird. M., May, 1905 (sev.); O. V.
Piranga erythromelas, Scarlet Tanager. O. V.

Piranga rubra, Summer Tanager. M., May, 1905.

Hirundo erythrogastra, Barn Swallow. M., May, 1905 (sev.);
O. V.

Riparia riparia, Bank Swallow. M., May, 1905 (sev.).

Iridoprocne bicolor, Tree Swallow. M., May, 1905 (5); O. V.

Progne subis, Purple Martin. M., May, 1905 (5).

Vireo olivaceus, Red-eyed Vireo. M., May, 1905 (sev.); O. V.

Vireo gilvus, Warbling Vireo. M., May, 1905 (2); O. V.

Vireo flavifrons, Yellow-throated Vireo. M., May, 1905 (sev.).

Vireo noveboracensis, White-eyed Vireo. M., May, 1905 (sev.).

Mniotilta varia, Black-and-white Warbler. M., May, 1905
(sev.).

Dendroica aestiva, Yellow Warbler. M., May, 1905 (sev.);

O. V.

Dendroica coronata, Myrtle Warbler. O. V.

Dendroica coerulea, Cerulean Warbler. M., May, 1905 (2).

Dendroica pensylvanica, Chestnut-sided Warbler. O. V.

Dendroica vigosii, Pine Warbler. M., May, 1905 (com.);

O. V.

Dendroica discolor, Prairie Warbler. M., May, 1905 (sev.).

Dendroica striata, Black-poll Warbler. M., May, 1905 (3);

O. V.

Seiurus auricapillus, Ovenbird. M., May, 1905 (sev.); O. V.

Geothlypis trichas, Maryland Yellowthroat. M., May, 1905
(com.); O. V.

Icteria virens, Yellow-breasted Chat. M., May, 1905 (sev.).

Setophaga ruticilla, Redstart. M., May, 1905 (sev.); O. V.

Mimus polyglottos, Mockingbird. M., Oct., 1903 (1); May,
1905.

Toxostoma rufum, Brown Thrasher. M., May, 1905 (sev.);

O. V.

Galeoscoptes carolinensis, Catbird. M., May, 1905 (sev.); O. V.

Telmatodytes palustris, Long-billed Marsh Wren. M., May,
1905 (sev.); O. V.

Thryothorus ludovicianus, Carolina Wren. M., Oct., 1904; May, 1905 (sev.); O. V.

Troglodytes aedon, House Wren. M., May, 1905 (5); O. V.

Olbiorchilus hiemalis, Winter Wren. M., Oct., 1904 (1).

Certhia f. americana, Brown Creeper. M., Oct., 1903 (1).

Sitta carolinensis, White-breasted Nuthatch. M., Oct., 1903 (2).

Baeolophus bicolor, Tufted Titmouse. M., May, 1905; O. V.

Penthestes carolinensis, Carolina Chickadee. M. Oct., Dec., 1904 (2); O. V.

Polioptila coerulea, Blue-gray Gnatcatcher. M., May, 1905.

Regulus calendula, Ruby-crowned Knight. M., Oct., 1903 (1).

Regulus satrapa, Golden-crowned Knight. M., Dec., 1904 (3).

Hylocichla mustelina, Wood Thrush. M., May, 1905.

Hylocichla fuscescens, Wilson's Thrush. M., May, 1905.

Merula migratoria, Robin. M., Dec., 1904; O. V.

Sialia sialis, Bluebird. M., May, 1905 (3); O. V.

A Pensauken Diary

BY CHRESWELL J. HUNT

The tributaries of the lower Delaware on the New Jersey side are tide-water streams. There are mostly high, wooded banks on the north side, with an expanse of alder swamp and spatterdock marsh on the other, which is more or less covered by the high tides.

Such a stream is Pensauken Creek. This creek forms a part of the boundary line between Burlington and Camden Counties, New Jersey. Both branches rise near the little settlement of Evesboro in Burlington County and wind in crooked northerly courses for some ten miles when they unite at Fork's Landing. Then the creek turns and flows more to the west, emptying into the Delaware near Palmyra.

For some eight miles it is navigable for a small boat. Here the fishermen find fairly good sport, and the ornithologist finds birds in abundance. During the past four years I have been on this creek in all seasons and weathers and at all hours of the day and night, and at all times—whether the tide was at ebb or flood, whether it was midday or midnight—I have found birds.

In the fringes of woodland which here and there skirt the creek the chestnut oak predominates, while several other oaks, Jersey pine, beech, sycamore, chestnut, ash, sour gum, persimmon, hackberry and red maple are abundant. In some places the banks are covered with thickets of alder, button-bush, arrow-wood, *Viburnum dentatum*, and sweet pepperbush, over which clambers a tangle of green brier, making an ideal retreat for Cardinals, Brown Thrashers and Catbirds.

No matter how often we visit this creek we shall never find it the same. The tide will be different if nothing else is, and when one is limited to weekly visits these changes are most striking. To-day we may paddle with ease over the marshes



VIEWS OF PENSUKEN CREEK, N. J.

where we walked about last week with dry feet. Thus a trip to these marshes is always savored with the thought of a new discovery, and one rarely returns disappointed.

There are no extensive patches of woodland along the creek. For the most part there is merely a fringe of trees. Go a short distance back at almost any point, and we come directly to cultivated fields and orchards, and in many places these come right down to the creek bank.

But the marshes of the upper creek are wilder to-day than they were a score of years ago, and are looked upon by the farmer as a "has been." Thirty years ago these marshes were well ditched; there were high banks furnished with flood-gates, and hay was harvested where now there is an expanse of wild-rice and alder thickets. The flood-gates are gone, and what remains of the banks is fast disappearing. The lower creek, too, may be considered a thing of the past; that is commercially. Up to five years ago there were a good many canal-boats towed up as far as the little village of Parry, where they were loaded with building sand taken from the creek's bank. Since the abandonment of this industry, the creek is given over entirely to the fishermen, gunners and pleasure craft, with the exception of an occasional scow, laden with fertilizer, which is drifted up with the tide. The old sand banks near Parry are of interest, as here is found quite a colony of Bank and Rough-winged Swallows. The Kingfisher also finds here a good nesting ground.

The marshes of the upper creek furnish favorite feeding grounds for the Great Blue, Green and Night Herons, and during the spring and fall great numbers of Sandpipers, Yellowlegs, etc., are to be found.

I believe that we find more marked changes with the seasons in a fresh tide-water marsh than anywhere else. During January and February these marshes are rather desolate-looking places, covered as they are with the remnants of last year's aquatic vegetation. At this season, however, they are the hunting grounds of the big Hawks, while Grebes and Wild Ducks may be found about the creek. A few Kingfishers usually spend the winter, and during the winter of 1906-7 a

Great Blue Heron stayed throughout the entire season. Then when the creek is under ice and the marshes snow covered, the Crows congregate there by hundreds.

The first warm touch of spring seems to sink deeper into the marsh than elsewhere. The plants push their young leaves rapidly forward, and after the first of April what changes transpire within a week! One can almost see the spatter-dock and water arum (*Peltandra*) grow. Before we can realize it the marsh is again green with pointed leaves, tussocks of muskrat-grass and clumps of calamus, while the banks are carpeted with violets and a white flower of the mustard family, and in damp places the marsh marigold attracts our attention. Now the Redwings make merry and the Swamp Sparrows sing all day and most of the night, while Warblers throng the thickets.

Almost before we know it, and long ere we are ready, the scene has changed. The marshes are now a wealth of wild roses, to which clumps of viburnums, with a profusion of white bloom form a fitting background. Now the Long-billed Marsh Wrens are busy building their many nests, and Least Bitterns skulk about among the cat-tails and wild rice.

Again, what a change! We now look across a moving sea of blue—the blossoms of the pickerel-weed (*Pontederia*)—a floral display unequaled save by that of the thousands of pink and white mallow blossoms as seen from our cabin doorway in August. Now when on the creek we are hemmed in by walls of the wild rice, and if we notice the *Peltandra* we will find that already it is sticking its own seeds deep down in the mud. Swamp Sparrows and Marsh Wrens furnish the only bird music that comes from the marsh. As we listen to them we hear a faint “pink, pink,” and we realize that the first Bobolinks have arrived, and only a few days remain before the gunner will take possession of the marshes.

Up to now the aquatic vegetation has been advancing almost steadily. The first crop of spatter-dock leaves died down about the middle of July, but the second crop is now at its best. With the advent of the gunners a decline begins. The gunners make this more noticeable by tramping down the fields of wild rice, so that we can now see the distant bank with its persimmon

trees, now leafless but laden with little golden spheres—"plums of the gods"—then with the frosts and the high autumn tides the marshes are once more the abode of desolation.

From my year's journal I quote some of the more interesting bird notes:

April 15, 1907.—Found a Cardinal's nest, containing three eggs, in a small laurel. On April 29 there was only one young bird in the nest. Another Cardinal's nest in greenbrier tangle containing three eggs, and by April 22d three young birds. Also a Mourning Dove's nest and two eggs, one of which hatched by April 22d, and on April 29th the two young birds were about half grown.

April 21st.—Saw a good many large flocks of Goldfinches. They are beginning to show a few yellow feathers interspersed among the olive of their backs. They seemed rather noisy, and a few were singing this morning. An Osprey put in an appearance to-day. A pair of these birds spent the summer of 1905 about here. Where did they nest?

April 22d.—Cardinal's nest in greenbrier with three eggs, which had hatched by April 29th.

April 27th.—A pair of Carolina Chickadees were carrying feathers into a hole in a button-bush stub. Found a Bluebird's nest and four eggs in a small cherry tree in the orchard.

April 29th.—Found a Vesper Sparrow's nest on the ground in a pear orchard containing four eggs.

April 30th.—A considerable number of Bank Swallows were going in and out of their nesting holes in the sand bank.

May 4th.—Heard a Robin utter a shrill note at 9:30 p. m.

May 6th. Foundations for a Yellow Warbler's nest just started. Also found a Song Sparrow's nest with five eggs. A White-eyed Vireo was seen carrying nesting material. Foundations for nest started in viburnum bush some four feet from the ground.

May 7th.—Another Yellow Warbler's nest started and a completed nest found.

May 11th.—Late this afternoon I saw a Maryland Yellow-throat mount into the air, from the top of an alder, with a burst of song. He flew to quite a height and poured forth his melody

—a lot of twitters ending with the familiar “Wichery, wichery, wichery”—then he dived earthward and disappeared among the vegetation of the marsh.

May 26th.—A Least Bittern was singing this afternoon. Although these birds are common, this is but the second time I have heard the song in these marshes. Perhaps I was not here before at the right time.

May 27th.—I was drifting along in my boat at 10:30 p. m. Everything was quiet, when all at once a Yellow-breasted Chat burst forth with a volume of scold notes. Something had disturbed his slumbers.

May 28th.—Found a Least Bittern's nest with five slightly incubated eggs.

May 29th.—Found a domestic duck's nest out in the marsh. The nest was built of the dead stalks of aquatic plants and well lined with down, which partly covered the ten eggs. To all appearances it was like the nest of a wild duck.

May 30th.—Two Yellow Warbler's nests found, each containing four eggs. Also a Blue Jay's nest with four well-fledged young. Saw an American Bittern to-day. It certainly looks as if he were a breeder hereabouts.

June 15th.—Was standing in front of our cabin when a Virginia Rail crossed our ditch and disappeared among the spatter-docks, where it uttered some cluck notes and out came four young Rails, and one by one they swam the ditch. About five minutes after they had disappeared a weasel made his appearance from almost the very spot where the young Rails had entered the marsh. Luckily he was traveling in the other direction.

June 22d.—While going along in my boat this evening I flushed several Kingfishers from bushes overhanging the water. On several occasions I have flushed them after dark from such places. It would seem that they roost there. Just at dusk a Whip-poor-will sang. This is my only summer record for Pensauken.

July 8th. Have been throwing crumbs to a pair of Catbirds which have a nest somewhere near the cabin, and they have grown so tame that whenever I put in an appearance they come

almost within reach. A white-footed mouse, which has taken up quarters under the cabin, has also gotten the habit of foraging for cracker crumbs.

July 9th.—Flushed a Black Duck on the upper creek. Can this bird nest among these marshes? Twice to-day I saw a Yellow Warbler in pursuit of a Kingfisher. Found both Kingbirds and Yellow Warblers feeding upon a black slug that infests the leaves of the spatter-dock.

July 20th.—Bobwhites were whistling this afternoon. This bird seems to be increasing about here. This evening I saw a mink swim across the creek.

July 21st-22d.—Spent the night on the creek. Marsh Wrens sang at intervals, and at eleven o'clock a Swamp Sparrow sang with much vim. At 11:30 a Cuckoo called. By midnight the last-quarter moon was just appearing above the trees, and a Screech Owl welcomed it with a mournful wail. Just before dawn a Spotted Sandpiper flew past with a whistle. The first bird to usher in the day was the Song Sparrow, then followed the Swamp Sparrow, then the Kingbird, then the House Wren, Cardinal, Redwing, Wood Thrush, Carolina Wren and White-eyed Vireo in order.

August 13th.—This afternoon I had the luck to be out in a very heavy thunderstorm. It had been a warm day and the birds were not very active. I stood upon the bank watching the approach of the storm. Great numbers of butterflies (*Anosia* and *Papilio*), which had been clinging listlessly to the pontederia blossoms or fluttering lazily across the marsh, now sought shelter among the leaves of the chestnut oaks along the bank. Just before the storm broke a large flock of Red-winged Blackbirds circled round and settled down in the marsh. If not upon the ground they were certainly close to it, not one being in sight. For over half an hour the rain fell in torrents, the wind blew, leveling the wild rice, and the lightning zigzagged its way across the sky. When the storm passed and the sun shone forth once more, these Redwings were to be seen perched upon the bent stalks of the wild rice spreading their wings and tails and drying off. Why did these birds take refuge in the open marsh? The thickets along the bank would seem to have furnished a better shelter.

August 19th.—The Redwings are now going about in flocks. The immature plumage predominates. Most flocks seem to have one or two adult males, the rest being females and birds of the year.

August 25th.—Maryland Yellowthroat, Indigo Bird, Swamp Sparrow, Wood Pewee, and Tufted Tit still in song.

September 10th.—Gunners showed me two Sora Rails which they had just taken.

September 30th.—One of the boys shot a Pied-billed Grebe this morning. A single Marsh Wren heard singing to-day.

October 15th.—Now the Robins congregate in large flocks in the sour gums to feed upon the purple berries. Swamp Sparrows still in song. Saw quite a number of Pied-billed Grebes. Watched three for some time. Saw one of them catch and eat a small eel. Also saw a Coot (*Fulica*) among a small flock of domestic ducks. It took wing very reluctantly.

October 27th.—Night and Great Blue Herons still about the marshes.

November 3d.—With the last week of August the Cardinal becomes inconspicuous. How he manages to conceal himself so well I am unable to say, but certain it is if you want to see Cardinals during September and October you have to search for them. Perhaps the gunners are his reason for keeping under cover. To-day, however, Cardinals were much in evidence. I counted twenty brilliant males in sight at one time.

November 18th.—Beside our boat-house stands a willow. To-day at dusk I saw a Downy Woodpecker climbing about in it, occasionally calling. At last he worked out to the end of a broken limb, disappeared, and all was quiet. On going to the tree and throwing a stick against the limb, he came out in a hurry. He had evidently taken up his quarters for the night in a hole in the end of the broken limb.

November 19th.—Heard a Screech Owl hooting at 3:30 p. m. Large hawks are becoming common about the marshes.

November 23d.—A small flock of Redwings is still about.

November 26th.—A Northern Shrike put in an appearance to-day. Also saw a Mallard drake in company with a flock of domestic ducks. We approached within fifty feet before he took wing. A few Killdeers are about the marshes.



NEST OF RED-WINGED BLACKBIRD IN PELTANDRA
PENSAUKEN CREEK, N. J.

December 8th.—Heard a hammering which I took to be a Downy Woodpecker, but upon reaching the spot I found that the noise was made by a Tufted Tit, which was picking away at a piece of bark, and thereby producing a noise that any Woodpecker might well have been proud of.

December 10th.—George Sperber shot a Night Heron in the immature plumage. I think they spend the winter here occasionally.

December 24th.—Saw a Marsh Hawk about the creek to-day.

SUMMER BIRDS OF PENSANKEN CREEK

(Those marked * have actually been found breeding.)

Anas obscura, Black Duck.

Aix sponsa, Wood Duck.

Botaurus lentiginosus, American Bittern.

**Ardetta exilis*, Least Bittern.

Ardea herodias, Great Blue Heron.

**Butorides virescens*, Little Green Heron.

Nycticorax nycticorax naevius, Black-crowned Night Heron.

**Rallus virginianus*, Virginia Rail.

Philohela minor, Woodcock.

**Actitis macularia*, Spotted Sandpiper.

Oxyechus vociferus, Killdeer.

Colinus virginianus, Bobwhite.

**Zenaidura macroura*, Mourning Dove.

Cathartes aura, Turkey Vulture.

Circus hudsonius, Marsh Hawk.

Accipiter velox, Sharp-shinned Hawk.

Accipiter cooperi, Cooper's Hawk.

**Falco sparverius*, Sparrow Hawk.

Pandion haliaetus carolinensis, Osprey.

**Megascops asio*, Screech Owl.

**Coccyzus americanus*, Yellow-billed Cuckoo.

**Ceryle alcyon*, Belted Kingfisher.

**Dryobates pubescens medianus*, Downy Woodpecker.

Melanerpes erythrocephalus, Red-headed Woodpecker.

**Colaptes auratus luteus*, Flicker.

Antrostomus vociferus, Whip-poor-will.

- Chordeiles virginianus*, Nighthawk.
- **Chaetura pelagica*, Chimney Swift.
- Trochilus colubris*, Ruby-throated Hummingbird.
- **Tyrannus tyrannus*, Kingbird.
- **Myiarchus crinitus*, Crested Flycatcher.
- **Sayornis phoebe*, Phoebe.
- **Contopus virens*, Wood Pewee.
- **Cyanocitta cristata*, Blue Jay.
- **Corvus brachyrhynchos*, American Crow.
- Corvus ossifragus*, Fish Crow.
- **Molothrus ater*, Cowbird.
- **Agelaius phoeniceus*, Red-winged Blackbird.
- **Sturnella magna*, Meadowlark.
- **Icterus spurius*, Orchard Oriole.
- **Icterus galbula*, Baltimore Oriole.
- **Quiscalus quiscula*, Purple Grackle.
- **Astragalinus tristis*, Goldfinch.
- **Poecetes gramineus*, Vesper Sparrow.
- **Spizella socialis*, Chipping Sparrow.
- **Spizella pusilla*, Field Sparrow.
- **Melospiza cinerea melodia*, Song Sparrow.
- **Melospiza georgiana*, Swamp Sparrow.
- **Pipilo erythrophthalmus*, Chewink.
- **Cardinalis cardinalis*, Cardinal.
- Cyanospiza cyanea*, Indigo Bunting.
- **Piranga erythromelas*, Scarlet Tanager.
- **Hirundo erythrogastra*, Barn Swallow.
- **Riparia riparia*, Bank Swallow.
- **Stelgidopteryx serripennis*, Rough-winged Swallow.
- Ampelis cedrorum*, Cedar Waxwing.
- **Vireo olivaceus*, Red-eyed Vireo.
- **Vireo noveboracensis*, White-eyed Vireo.
- Mniotilta varia*, Black and White Warbler.
- **Dendroica aestiva*, Yellow Warbler.
- **Seiurus aurocapillus*, Ovenbird.
- **Gothlypis trichas*, Maryland Yellowthroat.
- Icteria virens*, Yellow-breasted Chat.
- **Galeoscoptes carolinensis*, Catbird.

- **Toxostoma rufum*, Brown Thrasher.
- **Thryothorus ludovicianus*, Carolina Wren.
- **Troglodytes aedon*, House Wren.
- **Telmatodytes palustris*, Long-billed Marsh Wren.
- Sitta carolinensis*, White-breasted Nuthatch.
- **Baeolophus bicolor*, Tufted Titmouse.
- **Penthestes carolinensis*, Carolina Chickadee.
- **Hylocichla mustelina*, Wood Thrush.
- **Merula migratoria*, Robin.
- **Sialia sialis*, Bluebird.

Report on the Spring Migration of 1907

COMPILED BY WITMER STONE

The excellent work of the Migration Corps has been continued during 1907, making the seventh yearly record of the Spring Migration in the neighborhood of Philadelphia and at other points in eastern Pennsylvania and New Jersey.

The importance of the work increases yearly, and we trust that all our observers will continue their labor during the coming spring with the same care that has been exercised during previous seasons. It is desirable, especially in the case of the commoner species, that two dates of arrival be recorded where the first arrival was a single early straggler preceding by a number of days the next record.

Schedules covering the spring flight of 1907 were received from the following sixty-three stations:*

New Jersey.

Cape May, H. Walker Hand.
Vineland, Mrs. Alice K. Prince.
Downtown (near Newfield), W. W. Fair.
Yardville, Rachel E. Allinson.
Trenton, C. C. and R. M. Abbott.
Princeton, Chas. H. Rogers.
Bordentown, Minnie V. Flynn.
Beverly, J. Fletcher Street.
Burlington, Helen F. Carter.
Rancocas, Emily Haines.
Moorestown, Anna A. Mickel.
Moorestown, Wm. B. Evans and Dr. S. S. Haines.
Pensauken, C. J. Hunt.

* Applications for blank schedules and for information should be addressed to Mr. Thos. D. Keim, 405 Radcliffe St., Bristol, Pa., who will superintend this branch of the Club's work for the season of 1908.

Pennsylvania.

Kennett Square, Charles J. Pennock.
Mendenhall, Wm. Carter and wife.
Concordville, Mrs. K. R. Styer.
Concordville, Jos. H. Willits.
Westtown, Chas. W. Palmer and students.
Swarthmore, Samuel C. Palmer.
Swarthmore, David E. Harrower.
Lansdowne, John D. Carter.
Lansdowne, Louisa M. Jacob.
Lansdowne, Anna D. White.
Lansdowne, Friends' School.
Lansdowne, W. R. White.
Lansdowne, Ethel A. Shrigley.
Collingdale, Paul L. Lorrilliere.
Media, Lydia G. Allen.
Media, Philip H. Moore.
Media, Alice Fussell.
Media, Ellen Fussell.
Ardmore, Wm. L. Baily.
Haverford, M. Albert Linton.
Radnor Twp., A. C. Redfield.
Radnor Twp., John Patton.
Radnor Twp., L. S. Pearson.
Bryn Mawr, Emily H. Thomas.
Wissahickon, John R. Pickering.
Germantown, Paul C. Brewer, Jr.
Germantown, Thos. R. Hill.
Germantown, Mrs. Thos. R. Hill.
Germantown, Miriam F. Solis-Cohen.
Chestnut Hill, Wm. H. Trotter.
West Fairmount Park, Elmer Onderdonk.
Olney, George S. Morris.
Oak Lane, John W. Allen.
Melrose Park, Saml. H. Barker.
Frankford, Richard F. Miller.
Fox Chase, Alexander Patman.
Holmesburg, H. W. Fowler.

Bristol, Thomas D. Keim and Sidney V. Morris.

Glenside and Edge Hill, Richard C. Harlow.

Fort Washington, James L. Camblos.

Woodbourne, Edward Pickering, Jr.

George School, Students.

George School, Wm. E. Roberts.

George School, Jesse Packer.

George School, Robt. E. Atkinson.

Easton, Edw. J. F. Marx.

Perkasie, Albert C. Rutter.

Columbia, Wm. F. Rochow.

Marietta, W. H. Buller.

Lopez, Otto Behr.

Particular interest attaches to the migration of 1907 on account of the unusual weather that prevailed during April and May, unprecedented within the memory of most of our observers.

February was noteworthy in showing no evidence of migration. The flight of Purple Grackles, Redwings and Robins which usually marks the latter part of the month, was entirely lacking.

March, in most respects, was nearly normal. The mean temperature for the month at Philadelphia was 44° , four degrees above the mean of the past thirty-seven years, while the rainfall (including snow) was less than usual. There were three marked increases in temperature during the month, the mean daily temperature increasing fourteen degrees between the 1st and 2d, twenty degrees between the 12th and 14th, twenty-six degrees between the 21st and 23d and thirty degrees between the 26th and 29th. On the last date the maximum was 86° , the highest March temperature registered at Philadelphia during the thirty-seven years covered by the Weather Bureau's record. This was followed by a fall of forty degrees, from a mean temperature of 74° on March 29th to 34° on April 1st.

We have then in March four days upon which marked increases in temperature reached their maximum, *i. e.*, March 2d, 14th, 23rd, 29th. Such days are generally followed by so-called bird-waves, and our records show this to have been the case

this year—two-thirds of all the first arrivals reported by thirty-six observers in the Philadelphia district being on these days and the day immediately following each.

New arrivals, WAVE I

March 2. Bluebird, Field Sparrow.

March 3. Purple Grackle, Kingfisher, Flicker, Killdeer, Robin, Savanna Sparrow.

There was a general flight of Grackles, arrivals being reported from seven stations. Nearly all the species comprising this wave were resident at one station or another; but only actual migrant individuals have been considered in the above statement.

New arrivals, WAVE II

March 13. Brown Thrasher, Myrtle Warbler.

March 14. Hermit Thrush, Phoebe, Cowbird, Fox Sparrow.

March 15. Vesper Sparrow.

From March 14th to 16th the chief migrants were: the Grackle arrived at 10 stations, Killdeer at 3, Robin at 15, Red-winged Blackbird at 16, Phoebe at 9, Fox Sparrow at 15.

New arrivals, WAVE III

March 23. Chipping Sparrow, Towhee.

Main migrants: Field Sparrow arrived at 12 stations March 23rd–24th, Flicker at 11, Phoebe at 8.

New arrivals, WAVE IV

March 27. Barn Swallow.

March 28. Tree Swallow, Ruby-crowned Kinglet.

March 30. Rough-winged Swallow.

Chief migrants: Chipping Sparrow arrived at 15 stations March 28th–30th, Vesper Sparrow, 6 stations, March 29th–30th.

Beginning with the extremely low mean temperature of 34° on April 1st, this month showed no sudden rise until April 28th to 30th, when there was an increase of sixteen degrees. There was, however, a steady rise of 28° continuing from April 19th to April 26th. The mean temperature of the month was 47°, four degrees below the mean of thirty-seven years, while the precipitation was nearly normal. There were severe frosts on

April 1st, 2d, 6th and 20th, and light ones on April 21st and 22d. The most sudden drops in temperature were fourteen degrees between April 5th and 6th, eleven between April 18th and 19th, and eighteen between April 26th and 28th.

The continued low temperature, April 1st-19th, brought migration almost to a standstill, and undoubtedly backed up those species that were ready to push northward. Rather higher temperature on April 4th and 5th came too close after the warm March weather to bring many migrants; nearly all the species then due having already arrived.

After the increasing temperature of April 19th migration was at once apparent:

New arrivals,

WAVE V

April 21. Water Thrush.

April 22. Catbird.

April 23. Chimney Swift.

The chief migrants April 20th-21st were Hermit Thrush, arrived at 10 stations, Ruby-crowned Kinglet at 6, Yellow-palm Warbler at 5.

Then came the steady rise of 28° from April 19th-26th, which brought a scattered arrival of birds from April 20th-23rd, and an enormous increase April 25th-27th. This being followed by the rise above mentioned, resulted in another wave April 30th-May 1st, so that there were almost uninterrupted arrivals during the last six days of the month, though fewer on the 28th and 29th owing to the drop in temperature on these days.

New arrivals,

WAVE VI

April 25. House Wren, Wilson's Thrush, Redstart, Black-throated Blue Warbler.

April 26. Yellow Warbler, Rose-breasted Grosbeak, Solitary Vireo, Wood Thrush, Maryland Yellowthroat, Ovenbird.

April 27. Kentucky Warbler, Worm-eating Warbler.

The conspicuous species were Barn Swallow, arrived at 9 stations April 26th-28th, Brown Thrasher 15, Myrtle Warbler 10, Black-and-white Warbler 14, Ovenbird 7, Chimney Swift 18, House Wren 11, Maryland Yellowthroat 15.

New arrivals,

WAVE VII

April 30. Olive-backed Thrush, White-eyed Vireo, Prairie Warbler.

May 1. Canada, Blackburnian, Chestnut-sided, Magnolia and Parula Warblers, Yellow-throated Vireo, Indigobird, Least Flycatcher, Bobolink, Baltimore and Orchard Orioles.

May 2. Yellow-billed Cuckoo, Wood Pewee, Great-crested Flycatcher, Kingbird, Scarlet Tanager.

From April 29th to May 1st the Ovenbird arrived at 12 stations, Catbird 13, Wood Thrush 13, but scarcely any of the new arrivals were generally reported, being represented only by scattered individuals.

May exhibited far more phenomenal temperature conditions than April. The mean was 58°, five degrees below the mean of thirty-seven years, and only once equaled during this period —*i. e.* 57° in 1882.

The highest temperature of the month was on May 10th when 77° was reached; May 14th and 15th with 84°, and May 19th when 81° was registered; on only four other days did the maximum temperature exceed 70°.

The only marked increases in temperature were May 12th–14th, when the mean raised twenty-two degrees; May 17th–19th thirteen degrees, and May 21st to 23d eleven degrees.

Between May 10th–12th there was a fall of eighteen degrees, with frost on the last day, and a fall of twenty degrees between May 19th–21st.

The precipitation was 5.62, 2.41 above the average of thirty-six years, and only equaled in 1873 (5.83).

The real advent of summer weather was on June 15th, when conditions changed suddenly, and the cold was at an end.

WAVES VIII AND IX

Low temperature and rain from May 2d to 9th checked migration at a most vital time, so that arrivals were scattered over these days without much concentration.

A sudden raise on May 10th brought an enormous flight on May 11th–12th, notwithstanding that the temperature dropped

on these days lower than it had been before, with frost on the 12th.

The bulk of most of the Warblers, Thrushes, Vireos, Tanagers, etc., went through at this time, and owing no doubt to concentration many Golden-winged, Hooded, Wilson's and Bay-breasted Warblers were seen—species that are usually rare.

The high temperature of May 14th–15th is not reflected in the migration record, but that of May 19th produced the last "wave" of the season, the conspicuous species being the Blackpoll and Canada Warblers and Wood Pewee.

The following cold weather had the effect of delaying birds that had not already passed through, and holding many stragglers until the middle of June, a week or more after their normal date of departure.

COMPARISON WITH OTHER SEASONS

In judging whether birds were later than usual in the spring of 1907, we must not be too hasty. It is necessary to be sure what we are basing comparisons upon, and also to differentiate between different portions of the migration.

Taking the records of thirty-six observers within about ten miles of Philadelphia, we find that Purple Grackles, Robins, Redwings and often Fox Sparrows have their first concentrated flight in February. These species did not move till March in 1907, but neither did they in 1905.

	1907.	1906.	1905.
Purple Grackle,	Mar. 3–5 (3)*	Feb. 21–24 (15)	Mar. 8–11 (F. 24)
Robin	Mar. 13–15 (3)	Feb. 20–23 (Jan. 28)	Mar. 5–8
Redwing	Mar. 14–16 (9)	Feb. 23–24 (4)	Mar. 11–16 (9)
Fox Sparrow	Mar. 14–17 (14)	Feb. 22–24 (20)	Mar. 12–16 (12)

So far as other March migrants go, the season was practically normal, with some very early stragglers during the warm days at the close of the month.

* Date in parentheses is that of first arrival; the other is the period of arrival at the majority of stations.

	1907.	1906.	1905.
Phoebe . . .	Mar. 15-17 (14)	Mar. 29-Apr. 6 (12)	Mar. 16-19 (16)
Chipping Sparrow.	Mar. 27-29 (21)	Apr. 5-8 (Mar. 24)	Mar. 26-28 (18)

In April and May we have to deal with migrants which start their flight for the most part in the tropics far south of the United States, and are of course not affected by temperature conditions prevalent here until they reach the region affected.

Taking the forty species of April and May migrants, of which we have the fullest records, we find by comparing the earliest arrivals within the Philadelphia district for 1907, 1906 and 1905 that 16 species were earlier in 1906 than in 1905; 16 earlier in 1905 than in 1906, and 8 arrived on the same day; the average date for the forty being almost the same for the two years.

1907, however, compared with 1906 shows 18 species earlier and 21 later; average for forty species one and a half days late. Compared with 1905, 15 species arrived earlier, 23 later; average for forty species one day later.

This is a very slight difference, and has probably little or no significance so far as the movement of the bulk of each species is concerned. As the most accurate means of comparing the latter, we have ascertained the date upon which each species had been reported from *at least one-half* of the stations at which it was observed. This gives a fair basis of comparison between two seasons, in one of which the migration may have been spread over a number of days, while in the other it was concentrated upon a few.

For example, the Brown Thrasher was first observed at our various stations during 1907, 1906 and 1905 as follows, the numbers in parentheses indicating the number of stations at which it was reported if at more than one :

1907. March 13, 17; April 20, 23, 25, 26 (6), 27 (7), 28(2), 29 (2), 30 (2).

1906. March 9; April 10, 16, 17 (2), 19 (3), 20, 21 (4), 22 (3), 24 (2), 25 (2), 26, 27, 28 (2), 30.

1905. April 9, 13, 14 (2), 16, 18 (2), 19 (2), 21 (2), 22 (6), 23 (3), 24 (4), 25 (2), 26, 29, 30.

It had thus reached at least half the stations as follows :

1907, April 27; 1906, April 21; 1905, April 22.

From similar comparisons of forty species of April and May migrants, we find that the dates by which they had been recorded at half of our stations, averaged four days later in 1907 than in 1906, and three days later in 1907 than in 1905. The actual difference in the various species varying from one to seven days. In only four instances was the 1907 date earlier or equal as compared with 1906, and in only six as compared with 1905.

It is noticeable that the late May migrants are later both in first appearance and in bulk arrival than those of April and early May.

In summing up the spring migration of 1907 then, we find that there was no trace of the usual February migration, the March flight was about normal, with some exceptionally early stragglers. April was characterized by a straggling migration without any concentrated movement until the last week when birds arrived with a rush. The same straggling migration characterized the early part of May with another phenomenal rush on the 11th and 12th, and a final movement on the 19th. followed by another delay, which kept migrants here until June 15th.

The first arrival of most species was nearly normal, but the bulk movements were seriously delayed.

NAME.	Moorstown, N. J.	Pensauken, N. J.	Media, Pa.	Swarthmore, Pa.	Collingdale, Pa.	Lansdowne, Pa.	Ardmore and Haverford, Pa.	Bryn Mawr, Pa.	Radnor and Wayne, Pa.	Fernantown, Pa.	Chestnut Hill, Pa.	Oak Lane, Phila.	Fox Chase, Phila.	Holmesburg, Phila.	Frankford, Phila.	Olney, Phila.
Canada Goose	Mar. 14	.....	.....	.....	.....	.....	May 8	.....	.....	Mar. 16	.....	May 8	.....	.....	Jan. 28	Mar. 15
Green Heron	May 11	May 5	Apr. 28	May 2	May 12	.....	May 5	.....	Apr. 26	.....	.....	May 11	.....	May 11	Apr. 25	Apr. 26
Night Heron	.....	Mar. 23	.....	.....	.....	May 1	May 30	.....	Mar. 25	.....	.....	Apr. 17	.....	.....	May 10	Apr. 27
Spotted Sandpiper	Apr. 27	Apr. 28	Apr. 29	May 10	May 12	May 22	May 5	.....	Apr. 16	.....	.....	Apr. 21	.....	May 11	May 3	Apr. 19
Solitary Sandpiper	May 2	May 19	May 12	May 5	May 12	.....	May 8	.....	May 11	.....	.....	.....	.....	May 10	May 10	May 12
Killdeer	Mar. 3	Mar. 23	Mar. 15	Mar. 17	.....	Mar. 18	Mar. 16	.....	Mar. 14	.....	.....	.....	.....	.....	Mar. 23	Mar. 25
Dove	Mar. 21	Mar. 23	Mar. 31	Mar. 15	.....	Apr. 12	Apr. 5	May 6	Mar. 22	May 5	.....	Apr. 22	.....	.....	Mar. 15	Mar. 14
Osprey	Apr. 4	Apr. 13	Apr. 25	May 19	.....	.....	.....	.....	Apr. 12	.....	.....	Apr. 21	.....	Apr. 21	Apr. 18	Apr. 20
Turkey Vulture	Apr. 16	Apr. 27	Mar. 17	Feb. 16	Mar. 24	Apr. 2	Apr. 5	Mar. 21	Mar. 3	.....	Mar. 17	.....	Mar. 7	.....	May 8	.....
Yellow-billed Cuckoo	May 28	May 19	.....	May 8	.....	May 11	May 19	.....	May 10	May 11	.....	May 8	.....	.....	May 21	May 12
Black-billed Cuckoo	.....	.....	May 19	May 17	.....	.....	.....	.....	May 17	.....	.....	.....	.....	.....	.....	.....
Kingfisher	Apr. 19	Mar. 24	Mar. 24	Mar. 23	Apr. 28	Mar. 29	Mar. 28	.....	Mar. 30	Mar. 27	.....	Apr. 4	Mar. 30	.....	.....	Mar. 26
Yellow-bellied Sapsucker	.....	.....	Apr. 21	Mar. 16	Apr. 20	.....	Apr. 15	.....	Mar. 30	.....	.....	Apr. 17	.....	.....	Apr. 26	Apr. 20
Red-headed Woodpecker	.....	May 19	May 18	May 20	.....	.....	May 14	May 5	May 18	.....	.....	Mar. 14	May 1	.....	May 8	.....
Flicker	Mar. 22	Mar. 17	Mar. 23	Mar. 24	Mar. 17	Mar. 25	Mar. 23	Mar. 5	Mar. 9	Mar. 11	Mar. 24	Mar. 14	Mar. 30	Apr. 3	Mar. 15	.....
Whip-poor-will	May 12	May 9	.....	.....	Apr. 29	.....	.....	May 15	May 18	.....	.....	May 12	.....	.....	.....	May 23
Nighthawk	May 19	May 28	May 17	.....	.....	.....	May 19	.....	May 17	May 12	.....	.....	.....	.....	.....	.....
Chimney Swift	Apr. 23	Apr. 27	Apr. 25	Apr. 26	Apr. 27	Apr. 26	Apr. 26	Apr. 29	Apr. 26	May 3	Apr. 28	Apr. 27	Apr. 27	Apr. 25	Apr. 28	Apr. 23
Hummingbird	May 12	.....	May 18	May 10	.....	May 15	May 3	May 21	May 11	.....	.....	.....	May 25	.....	May 21	May 12
Kingbird	May 2	May 18	May 5	May 3	May 12	May 18	May 3	May 8	May 4	May 11	May 12	May 2	.....	May 11	May 3	.....
Crested Flycatcher	May 5	May 11	May 4	May 3	May 12	May 5	May 5	May 8	May 10	May 11	May 12	May 2	May 18	.....	May 8	.....
Phoebe	Mar. 17	Mar. 30	Mar. 16	Mar. 15	Mar. 17	Mar. 15	Mar. 16	Apr. 6	Mar. 16	Mar. 16	Mar. 23	Mar. 23	.....	.....	Mar. 18	Mar. 22

* The relative positions of the stations are indicated by the number of miles, N. or S. and E. or W., that each one is distant from Philadelphia, Pa., i. e., its latitude and longitude with reference to the City Hall.

NAME.	Moorestown, N. J.	Pensaiken, N. J.	Media, Pa.	Swarthmore, Pa.	Collingdale, Pa.	Lansdowne, Pa.	Ardmore and Haverford, Pa.	Bryn Mawr, Pa.	Radnor and Wayne, Pa.	Germantown, Phila.	Chestnut Hill, Phila.	Oak Lane, Phila.	Fox Chase, Phila.	Holmesburg, Phila.	Frankford, Phila.	Olney, Phila.
Wood Pewee	May 2	May 18	May 16	May 8	May 15	May 15	May 14	May 14	May 14	May 12	May 18	May 2	.....	May 11	May 10	.....
Acadian Flycatcher .....	.....	May 19	May 20	May 16	.....	May 14	May 30	.....	.....	.....	May 18	May 8	.....	.....	May 8	.....
Least Flycatcher .....	.....	.....	May 12	.....	.....	May 15	May 1	.....	May 3	May 12	.....	.....	.....	.....	.....	.....
Bobolink	May 7	.....	May 19	.....	.....	.....	May 12	.....	.....	.....	May 12	.....	.....	.....	May 15	.....
Cowbird	May 7	Apr. 28	Mar. 22	Mar. 15	May 2	Mar. 28	Mar. 28	.....	.....	.....	.....	.....	.....	May 25	May 11	Apr. 13
Red-winged Blackbird	Mar. 16	Mar. 9	Mar. 15	Mar. 15	Mar. 17	Mar. 16	Mar. 14	.....	Mar. 14	May 5	Mar. 15	Mar. 14	Mar. 30	Apr. 4	Mar. 19	Mar. 25
Meadow Lark	Res.	May 17	Mar. 17	Mar. 15	Mar. 15	Mar. 14	Mar. 16	Mar. 21	Res.	Mar. 16	.....	Res.	Mar. 30	.....	Mar. 15	Res.
Orchard Oriole	May 1	May 19	May 15	.....	Apr. 20	.....	May 14	May 9	May 11	May 11	May 11	May 2	.....	.....	May 2	May 4
Baltimore Oriole	May 8	May 18	May 5	May 10	May 11	May 18	May 12	.....	May 9	May 11	May 14	May 8	May 25	May 11	May 3	May 4
Rusty Blackbird .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Purple Grackle	Mar. 3	Mar. 3	Mar. 9	Mar. 4	Mar. 5	Mar. 5	Mar. 13	Mar. 14	Mar. 3	Mar. 9	Mar. 15	Mar. 3	Apr. 6	Apr. 13	Apr. 29	Apr. 10
Vesper Sparrow	Mar. 30	Mar. 30	Mar. 31	Mar. 24	Mar. 23	Mar. 30	Mar. 27	.....	Mar. 22	.....	Mar. 29	.....	.....	.....	Mar. 15	Mar. 12
Savanna Sparrow .....	.....	.....	.....	Mar. 15	Mar. 23	.....	Mar. 8	.....	.....	.....	.....	.....	.....	.....	.....	Mar. 26
Grasshopper Sparrow	Apr. 28	.....	Apr. 28	May 1	.....	.....	Apr. 30	.....	Apr. 27	.....	.....	Apr. 28	.....	.....	May 8	Mar. 27
Chipping Sparrow	Mar. 27	Apr. 11	Mar. 24	Mar. 24	Mar. 23	Mar. 23	Mar. 28	Mar. 21	Mar. 27	Mar. 29	Mar. 29	Mar. 30	Mar. 23	.....	Apr. 4	Mar. 28
Field Sparrow	Mar. 29	Mar. 23	Mar. 22	Res.	Res.	Mar. 14	Mar. 21	.....	Mar. 3	Mar. 24	Mar. 24	Mar. 22	Mar. 23	Mar. 24	Mar. 2	Mar. 24
Swamp Sparrow .....	.....	Apr. 27	.....	Apr. 27	.....	.....	May 1	.....	.....	.....	.....	.....	.....	.....	Res.	Apr. 26
Fox Sparrow	Mar. 17	Mar. 17	Mar. 16	Mar. 15	Mar. 23	Mar. 14	Mar. 14	Mar. 21	Mar. 14	Mar. 23	Mar. 15	Mar. 14	Mar. 30	.....	Mar. 14	Mar. 14
Chewink	Apr. 27	May 4	Apr. 4	Apr. 6	Apr. 30	Apr. 26	Apr. 26	May 6	Mar. 23	Apr. 3	Apr. 30	Apr. 20	.....	May 11	Apr. 29	Apr. 26
Rose-breasted Grosbeak	May 12	May 12	May 12	May 11	Apr. 26	May 8	May 10	.....	May 11	May 11	.....	May 11	.....	.....	May 11	May 6
Indigobird	May 13	.....	May 5	May 9	May 12	May 5	May 10	May 9	May 10	May 5	May 14	May 11	.....	.....	May 11	May 8
Scarlet Tanager	May 12	May 11	May 3	May 22	May 11	May 5	May 10	May 8	May 11	May 11	May 11	May 11	.....	.....	May 11	May 2
Purple Martin	Mar. 30	.....	Mar. 29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mar. 27	Mar. 16

* Next May 10.

* Next April 27.

NAME.	Moorestown, N. J.	Pensaunken, N. J.	Media, Pa.	Swarthmore, Pa.	Collingdale, Pa.	Lansdowne, Pa.	Ardmore and Haverford, Pa.	Bryn Mawr, Pa.	Radnor and Wayne, Pa.	Germanstown, Phila.	Chestnut Hill, Phila.	Oak Lane, Phila.	Fox Chase, Phila.	Holmesburg, Phila.	Frankford, Phila.	Olney, Phila.
Pine Warbler	Apr. 27	Apr. 21	Apr. 14	Apr. 6	.....	Apr. 30	Apr. 22	.....	Apr. 20	Apr. 21	Apr. 15	Apr. 17	.....	.....	Apr. 16	Apr. 20
Yellow Palm Warbler	May 12	May 12	.....	May 12	.....	.....	May 3	.....	May 11	May 13	.....	.....	.....	.....	.....	May 12
Prairie Warbler	Apr. 28	May 5	Apr. 29	May 1	May 5	Apr. 29	Apr. 30	May 8	Apr. 26	May 11	May 6	Apr. 28	.....	May 11	Apr. 29	Apr. 26
Ovenbird .....	.....	May 19	May 5	May 5	May 12	May 8	May 1	.....	Apr. 27	.....	May 12	May 2	.....	May 11	Apr. 29	Apr. 29
Water Thrush .....	.....	May 19	May 10	May 3	May 19	May 8	May 3	May 22	May 5	May 11	May 13	May 2	.....	.....	May 8	May 2
Kentucky Warbler	Apr. 28	Apr. 27	Apr. 26	Apr. 28	Apr. 28	Apr. 26	Apr. 30	May 8	Apr. 26	May 8	May 11	May 4	May 11	May 10	May 3	Apr. 27
Maryland Yellow-throat...	May 18	May 12	May 5	May 5	May 10	May 1	May 1	.....	May 11	May 11	May 11	May 2	May 11	May 11	May 10	May 3
Chat	May 31	.....	May 16	May 11	May 12	May 18	May 8	May 12	May 11	May 11	May 21	.....	.....	May 11	May 8	May 2
Canada Warbler	May 8	May 11	May 11	May 1	May 11	May 8	May 5	May 6	May 3	May 11	May 12	May 5	.....	May 11	May 8	Apr. 25
Redstart	May 2	May 5	Apr. 29	Apr. 27	May 3	Apr. 29	May 1	May 1	Apr. 28	May 5	May 11	May 4	May 11	May 4	May 1	Apr. 22
Catbird	Apr. 28	May 4	Apr. 26	Apr. 27	Apr. 27	Apr. 26	Apr. 26	Apr. 29	Apr. 26	Apr. 27	Apr. 27	Apr. 25	Apr. 27	.....	Apr. 29	Apr. 23
Brown Thrasher	Apr. 28	May 11	Apr. 26	Apr. 28	May 5	May 1	Apr. 26	May 1	Apr. 27	May 30	Apr. 27	May 2	.....	.....	May 8	May 2
House Wren .....	.....	May 18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	May 12	.....
Long-bill'd Marsh Wren.	Apr. 12	Apr. 21	Apr. 21	Apr. 20	Apr. 21	Apr. 25	Apr. 21	Apr. 18	Apr. 18	May 1	.....	.....	May 4	.....	Apr. 22	Apr. 27
Ruby-crowned Kinglet...	May 1	May 4	Apr. 28	Apr. 30	May 2	Apr. 27	Apr. 26	Apr. 27	May 1	May 2	May 6	May 2	May 4	May 1	May 3	Apr. 30
Wood Thrush	May 12	May 19	May 11	May 9	May 11	May 4	May 5	May 6	May 1	May 5	May 12	May 2	.....	May 11	Apr. 25	May 2
Wilson's Thrush .....	.....	.....	May 18	May 17	May 12	May 19	May 2	.....	.....	.....	.....	.....	.....	.....	May 10	.....
Gray-checked Thrush	May 23	May 19	May 22	May 11	May 12	May 17	May 11	.....	May 10	May 11	.....	May 3	.....	.....	May 21	Apr. 30
Olive-backed Thrush	Apr. 22	Apr. 21	Apr. 7	Apr. 6	Apr. 18	Apr. 14	Apr. 21	Apr. 6	Apr. 13	Apr. 6	Apr. 14	Apr. 20	.....	Apr. 22	Apr. 3	Apr. 19
Hermit Thrush	Mar. 3	Mar. 17	Mar. 13	Mar. 14	Mar. 14	Mar. 14	Mar. 14	Mar. 14	Mar. 8	Mar. 9	Mar. 14	Mar. 14	Mar. 23	Mar. 14	Mar. 9	Mar. 13
Robin .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bluebird	Res.	Feb. 23	Res.	Feb. 12	Feb. 12	Feb. 26	Mar. 3	Mar. 3	Res.	Feb. 14	Mar. 15	Feb. 17	Mar. 30	Mar. 15	Mar. 5	Mar. 8

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*List of Other Species Reported by Observers During 1907, and
Additional Notes. Winter Notes Relate to Winter of
1906-7. Localities are in Pennsylvania
Unless Otherwise Indicated.*

Colymbus auritus, Horned Grebe. One on Broomall's Lake, Media, April 16 (*Allen*); Wayne, April 26 (*Redfield* and *Pearson*); Richmond, Phila., April 29 (*Miller*).

Podilymbus podiceps, Pied-billed Grebe. Beverly, N. J., April 10-25 (*Street*); Easton, March 30 (*Marx*); one shot October 29, 1906, La Anna, Pike Co., Pa. (*Harlow*); Bridesburg, Phila., March 19 (*Miller*); Tinicum, March 23, April 6 and 13 (*Redfield*); Wayne, one, March 30-April 20 (*Pearson*); Princeton, N. J., November 5, 1905 and April 8, 1906 (*Rogers*).

Gavia imber, Loon. Cape May, N. J., May 9; heard several in fog (*Hand*).

Larus argentatus, Herring Gull. Plentiful on the coast and on the lower Delaware throughout the winter. Occurred Sept. 3 to May 12 at Frankford (*Miller*); casual at Trenton, N. J., (*Abbott*); occurred in early spring on the Susquehanna at Columbia (*Rochow*); last seen at Tinicum, April 16 (*Harlow*); Princeton, N. J., January 13, March 18 and 23 (*Rogers*).

Larus atricapillus, Laughing Gull. Colony at Stone Harbor, N. J., visited May 28-29; birds estimated at 500, some nests were noted with one egg each, others empty. No extended search was made for fear of disturbing the birds (*Carter*). Cape May, N. J., arrived April 11 (*Hand*).

Sterna hirundo, Common Tern. Four at Stone Harbor, N. J., May 28-29 (*Carter*); flock of 20, Fish House, N. J., May 16 (*Miller*).

Sula bassana, Gannet. Cape May, N. J., March 18 (*Hand*).

Merganser americanus, American Merganser. Flock of about 20 wintered on the Delaware just above Bristol, February 10-March 3 (*Keim* and *Morris*); Cape May, N. J., March 19; very plentiful April 8-13 (*Hand*); wintered on Oak Lane Reservoir (*Harlow*), wintered at Tinicum (*Harlow*).

Lophodytes cucullatus, Hooded Merganser. Princeton, N. J., a pair, April 16 (*Rogers*).

Anas boschas, Mallard. Bristol, March 23 (*Keim and Morris*); frequent during March at Tinicum (*Harlow*).

Anas obscura, Black Duck. Bristol, March 23 (*Keim and Morris*); Tinicum, one shot April 13 (*Pearson and Redfield*); Princeton, N. J., flock of four April 8 (*Rogers*); Cape May, N. J., May 24; Pike Co., Pa., five November 1, 1906 (*Harlow*).

Querquedula discors, Blue-winged Teal. Common during March at Tinicum (*Harlow*).

Glaucionetta clangula, Goldeneye Duck. Winter resident at Tinicum (*Harlow*).

Charitonetta albeola, Bufflehead. Beach Haven, N. J., March 12 (*Harlow*); Princeton, N. J., a pair March 17 (*Rogers*).

Branta canadensis, Canada Goose. Last seen at Edge Hill, December 5, 1906 (*Harlow*); all winter on the Delaware at Richmond, Phila. (*Miller*).

Botaurus lentiginosus, American Bittern. Yardville, N. J., May 5 (*Allinson*); Radnor, Sep. 2, 1906 (*Pearson*); April 8 (*Rogers*); Cape May, N. J., April 25 (*Hand*); Frankford, March 27 and W. Palmyra, N. J., May 19 (*Miller*).

Botaurus exilis, Least Bittern. Pensauken, N. J., May 19 (*Hunt*); arrived at Richmond, Phila., in April, had eggs May 29 (*Miller*).

Ardea herodias, Great Blue Heron. Media, May 19 (*A. Fussell*); Kennett Square, April 9 (*Pennoek*); Yardville, N. J., May 12 (*Allinson*); Fort Washington, March 30 (*Camblos*); Radnor, April 13 (*Patton*); April 17 (*Pearson*); May 11-12 (*Redfield*); Princeton, N. J., Oct. 8, 1905, May 12, 1907 (*Rogers*); Cape May, N. J., March 14 (*Hand*); Frankford, March 27 (*Miller*).

Herodias egretta, White Egret. One along Ridley Creek, April 21 (*Allen*); one shot at Cheltenham, last of July, 1906 (*Harlow*).

Nycticorax n. naevius, Night Heron. Wayne April 23 (*Pearson*); about 20 pairs nesting at Valley Forge, May 30 (*Redfield*.)

Rallus elegans, King Rail. Nest found at Tinicum, May 26, contained seven eggs, June 2 (*Carter*).

Rallus crepitans, Clapper Rail. Two nests with eggs, Stone Harbor, N. J., May 28-29 (*Carter*); Cape May, N. J., March 14 (*Hand*).

Ionornis martinica, Purple Gallinule. Cape May, N. J., May 10 (*Hand*).

Gallinula galeata, Florida Gallinula. Richmond, Phila., arrived April 28, had eggs May 29 (*Miller*).

Philohela minor, Woodcock. Ardmore, March 3 (*Baily*); old with half-grown young, April 26, on Maurice River, N. J., (*Prince*); Woodbourne, Nov. 1, 1906 (*Keim* and *Morris*); plentiful at Cape May, N. J., during and immediately after each cold snap with strong N. W. winds, strings of 10 to 42 killed during October and November, 1906, arrived March 14, 1907 (*Hand*); Wayne, April 13 (*Pearson*); Princeton, N. J., March 18 and 25, 1906 (*Rogers*).

Gallinago delicata, Wilson's Snipe. Bristol, March 28 (*Keim* and *Morris*); Perkasio, April 23 (*Rutter*); Glenside, April 23 (*Harlow*); Radnor, May 4 (*Patton*); Princeton, N. J., April 8 and 21 (*Rogers*); Radnor Hunt, April 27 (*Redfield* and *Pearson*); Cape May, N. J., March 14, very plentiful April 8-10 (*Hand*).

Tringa canutus, Knot. Saw 25 "Robin-breast snipe" that had been shot, Cape May, N. J., May 29 (*Hand*).

Tringa minutilla, Least Sandpiper. Cape May, N. J., April 25 (*Hand*); two at Princeton, N. J., May 29, 1906 (*Rogers*).

Ereunetes pusillus, Semipalmated Sandpiper. Bridesburg, May 14 (*Miller*); four at Princeton, N. J., May 29, 1906 (*Rogers*); Cape May, N. J., March 14 (*Hand*); flock of 15 at Richmond, Phila., May 17 (*Miller*).

Totanus melanoleucus, Greater Yellowlegs. Oxford Valley near Bristol, Nov. 1, 1906 (*Keim* and *Morris*); one at Tinicum, May 26 (*Carter*); Wayne, April 25 (*Pearson*) May 25 (*Redfield*).

Helodromas solitarius, Solitary Sandpiper. Near Trenton, N. J., still present May 30 (*Abbott*); Frankford last seen May 23 (*Miller*).

Bartramia longicauda, Bartramian Sandpiper. Mendenhall, May 6 (*W. Carter*); Norristown, April 24 (*Roberts*); George School, May 1, (*Roberts*); Fish House, N. J., May 12 (*Miller*).

Numenius hudsonicus, Hudsonian Curlew. Stone Harbor, N. J., May 28-29 (*Carter*); Cape May, N. J., arrived April 12, "ten days ahead of usual time" saw flock of 50. "On May 23, found a Curlew 'roost,' a place where they sit during the night. It was conspicuous from the tracks and droppings, the ground being quite white. Went out in the evening to see them

come in. They came from 7.50 to 8 p. m. in big bunches with little or no whistling, but their wings roared like ducks. The flocks were so big I could not imagine where so many birds spend the day without being seen. Had it not been for the moon I could not have been able to see them'' (*Hand*).

Squatarola squatarola, Black-bellied Plover. Stone Harbor, N. J., May 28-29 (*Carter*); Cape May, N. J., May 20, 25 and 29 (*Hand*).

Aegialitis semipalmata, Ring-neck Plover. Stone Harbor, N. J., May 28-29 (*Carter*).

Oxyechus vociferus, Killdeer. Half-grown young at Vineland, N. J., May 21 (*Prince*); last seen at Glenside, November 1, (*Harlow*); Tinicum, April 16 (*Harlow*).

Arenaria interpres, Turnstone. Cape May, N. J., May 20, 25 and 29 (*Hand*).

Colinus virginianus, Bobwhite. Edge Hill, May 1 (*Harlow*); Tinicum, July 3 (*Harlow*); Pt. Kennedy, May 30 (*Patton and Pearson*).

Zenaidura macroura, Mourning Dove. Edge Hill, December 24 (*Harlow*).

Circus hudsonius, Marsh Hawk. Wintered at Cape May, N. J., (*Hand*); none seen at Concordville where it usually winters (*Styer*); none on the Bridesburg Meadows (*Miller*). Seen now and then in the interior, Glenside, November 4 (*Harlow*); Ardmore, May 12 (*Baily*); Radnor, September 29 and March 3 (*Patton*); Edge Hill, November 4 and April 6, scarce (*Harlow*); wintered plentifully at Tinicum, October to April 16 (*Harlow*).

Accipiter velox, Sharp-shinned Hawk. Irregular resident, rather scarce during winter at Glenside (*Harlow*); nest with eggs, May 13 (*Miller*); arrived at Lopez April 1 (*Behr*); one shot with a robin in its claws, May 7, Mendenhall (*W. Carter*); Princeton, N. J., April 24 and May 21 (*Rogers*); nest just finished, Cape May, N. J., May 27 (*Harrower*).

Accipiter cooperi, Cooper's Hawk. Rare at Trenton, N. J., October-May (*Abbott*); one at Bristol, October 20 to March 17 (*Kcim*); resident at Glenside but scarce, nest and eggs April 20 (*Harlow*); two or three all winter at Frankford (*Miller*); one shot at Mendenhall, May 1, was very destructive to chicks during April (*W. Carter*).

Astur atricapillus, Goshawk. One seen at Fort Washington, February 26 and March 3; one shot in December (*Camblos*); one shot at Argus in November (*Rutter*); Edge Hill, January 5 (*Harlow*).

Buteo borealis, Red-tailed Hawk. Generally winter resident; last seen at Glenside, April 22 (*Harlow*); Radnor, November 10 to April 6 (*Redfield*); Frankford, September 11 to May (*Miller*); nesting at Trenton, N. J., March 22 (*Abbott*); Tinicum, last seen April 16; Princeton, N. J., October 15 to May 7 (*Rogers*).

Buteo lineatus, Red-shouldered Hawk. Winter resident at many stations, Radnor, October 14–May 4 (*Pierson*), Frankford, October 16–April 30 (*Miller*); last seen at Glenside, April 20 (*Harlow*); Princeton, N. J., October 22–February 18 (*Rogers*).

Buteo platypterus, Broad-winged Hawk. Wayne, April 25 (*Redfield*); nest June 1 (*Patton*); Princeton, N. J., February 7, June 3, December 9, 1906, and April 22, May 22, 1907 (*Rogers*).

Archibuteo lagopus sancti-johannis, Rough-legged Hawk. Princeton, N. J., January 30, February 15 and December 11, 1906 (*Rogers*).

Halieetus leucocephalus, Bald Eagle. Stone Harbor, N. J., May 28 (*Carter*); Nockamixon, April 18 (*Harlow*); Cape May, N. J., April 14 (*Hand*).

Falco peregrinus anatum, Duck Hawk. Princeton, N. J., Jan. 24, 1906 (*Rogers*).

Falco columbarius, Pigeon Hawk. West Phila., March 6 (*Carter*); Princeton, N. J., April 21 (*Rogers*).

Falco sparverius, Sparrow Hawk. Resident generally, rather scarce in winter; arrived at Lopez, March 27 (*Behr*).

Pandion haliaetus carolinensis, Osprey. Cape May, N. J., March 21 (*Hand*).

Asio wilsonianus, Long-eared Owl. One seen flying about Yardville at dusk, did not roost in firs as usual (*Allinson*); frequently seen at Glenside, August 12–March, two flocks, one of six, the other of four; wintered (*Harlow*).

Asio accipitrinus, Short-eared Owl. Edge Hill, March 3 (two) and noticed at intervals until May 28 (*Harlow*); Tinicum, April 6 and April 13 (*Redfield* and *Pearson*).

Nyctala acadica, Saw-whet Owl. Edge Hill, Dec. 13, 1906, and one shot LaAnna, Pike Co., Nov. 1, 1906 (*Harlow*).

Megascops asio, Screech Owl. Resident, had eggs at Frankford, March 23 (Miller).

Ceryle alcyon, Kingfisher. One at Holmesburg throughout Jan. and Feb. (Fowler); One wintered at Tinicum (Harlow).

Dryobates villosus, Hairy Woodpecker. Common winter resident at Glenside, two pairs bred (Harlow); winter resident at Radnor, Ardmore, etc. Concordville, April 20 (Styer); Perkasié, April 27, May 3 (Rutter); Media, Feb. 19 (Allen); Swarthmore, Jan. 2, March 8, (Palmer); Collingdale, Feb. 9 (Lorriliere); Vineland, N. J., April 29 (Prince); eggs at Pensauken, N. J., May 11 (Miller).

Dryobates pubescens medianus, Downy Woodpecker. Common resident, most abundant in winter east of the mountains. West of Glenside, May 21 (Harlow); scarcer than usual at Downstown, N. J. (Fair).

Sphyrapicus thyroides, Yellow-bellied Sapsucker. Edge Hill, Dec. 27, 1906 (Harlow); Wayne last seen April 18 (Redfield); Princeton, N. J., April 20-21 (Rogers.)

Melanerpes erythrocephalus, Red-headed Woodpecker. "A bird in the juvenal plumage arrived at Yardville, N. J., the latter part of October and remained until the middle of May. He molted during this time, the red becoming apparent early in February. He would drive the Downy Woodpecker, Nuthatches and other birds from the suet we had put up, tear off a piece and put it in cracks in the bark, a hole in the clothes-line post or any convenient place, scolding all the while. Another favorite occupation was to pick holes in the shingle roofs. Saw another individual in May" (Allinson).

Colaptes auratus luteus, Flicker. Radnor, December 15, Ardmore, December 19, Paoli, February 16 (Redfield).

Trochilus colubris, Hummingbird. Nest and eggs, Swarthmore, June 13 (Harrower).

Sayornis phoebe, Phoebe. Nest with eggs, Swarthmore, May 9 (Harrower); new nest, Fox Chase, Phila., March 22 (Miller); beginning nest at Haverford, March 28, and Paoli, March 29 (Redfield); one wintered at Wayne, 1905-6 (Pearson).

Nuttallornis borealis, Olive-sided Flycatcher. Arrived at Lopez, June 10.

Empidonax virescens, Acadian Flycatcher. Nest and three eggs, Swarthmore, June 13 (*Harrower*).

Empidonax flaviventris, Yellow-bellied Flycatcher. Kennett Square, June 2 (*Pennock*); Burlington, N. J., May 19 (*Carter*).

Otocoris alpestris, Horned Lark. Flocks all winter at Cape May, N. J., (*Hand*); November to April at Trenton, N. J. (*Abbott*); Downstown, N. J., February 8 (*Fair*); Concordville, February 6 (*Styer*); Bristol, December 29—March 10 (*Keim*); Tinicum, January 1 (*Lorrilliere*); Glenside, March 8 and 11 (*Harlow*); George School, February 9 (*Parker*); Tinicum, January 1–18 (*Harlow*); flock of seven at Princeton, N. J., November 12, 1905; 50 on January 7, 1906, and 19 on February 7, 1907.

Cyanocitta cristata, Blue Jay. Reported as plentiful at Trenton, Yardville, N. J., Kennett Square and some other stations but generally considered unusually scarce during the winter of 1906–7. Not seen until May 11 at Swarthmore (*Palmer*); April 29 at Lansdowne (*A. D. White*); April 28 at Radnor (*Redfield*), May at Frankford, (*Miller*); May 6 at Mendenhall (*Carter*).

Corvus ossifragus, Fish Crow. Observed at Fox Chase, Holmesburg, Frankford, Bristol and Trenton, N. J. Also on the coast at Cape May, N. J. Nest and eggs, Tinicum, April 16 (*Harlow*).

Corvus brachyrhynchos, Crow. Generally abundant resident, scarcer than usual at Downstown, N. J. (*Fair*); only about one-quarter of the usual number in the daily flight at Concordville (*Styer*); eggs April 5 at Glenside (*Harlow*); eggs April 4, young April 18 at Holmesburg (*Miller*); eggs Swarthmore April 6 (*Harrower*).

Sturnus vulgaris, European Starling. Princeton, N. J., first noted Dec., 1905, flock of 21 on June 8, 1907, now permanent resident (*Rogers*).

Dolichonyx oryzivorus, Bobolink. Remained at Ardmore until June 5 (*Baily*); male in abnormal plumage, Tinicum, June 8 (*Miller*).

Agelaius phoeniceus, Red-winged Blackbird. Moorestown, N. J., Nov. 25, 1906 (*Evans*).

Sturnella magna, Meadow Lark. Wintered at Wayne (*Redfield*).

Euphagus carolinus, Rusty Blackbird. Tinicum, Feb. 10 (Carter); flock wintered at Tinicum (Harlow).

Quiscalus quiscula, Purple Grackle. Eggs Swarthmore, April 27 (Harrower); one stayed through Dec. and Jan. at Ardmore (Bailey); one at Rosemont, Dec. 13, 1906 (Redfield).

Carpodacus purpureus, Purple Finch. Occurred Oct. 7–May 24 at Radnor (Redfield); Dec. 23–May 18, at George School (Packer); Oct. 11–May 17, at Easton (Marx); arrived during Feb. at Lansdowne, Ardmore, Olney, Beverly, N. J., and Trenton N. J. Observed March 14, at Oak Lane (Allen); March 24, at Moorestown, N. J. (Evans); very plentiful May 1–10, at Haverford (Linton); May 4–8, at Concordville (Styer); May 12, at Media (Allen); arrived at Lopez, April 27 (Behr).

Loxia curvirostra minor, Crossbill. A single bird Lansdowne, May 22 (Carter); Moorestown, N. J., Dec. 16, 1906 (Evans).

Loxia leucoptera, White-winged Crossbill. Occurred at Lopez, from end of Oct. 1906, to Feb., the first time they have been here for several years (Behr).

Acanthis linaria, Redpoll. Media, Feb. 23, flock of six, during bitter cold weather (Allen); five seen March 3, (Moore); Swarthmore, Feb. 13 (Harrower); Clifton, March 9, flock of 200 (Harrower); Kennett Square, Feb. 25, flock of 30–40, March 13, two (Pennock); Paoli, Feb. 16, and Wayne, March 9–14 (Redfield); four with Goldfinches at Princeton, N. J., Feb. 18, two on March 17 (Rogers).

Astragalinus tristis, Goldfinch. Generally resident but less common and at some stations absent during the winter.

Spinus pinus, Pine Finch. Atlantic City, N. J., Feb. 6 (Evans); Ridley Park, Jan. 5 (Harrower); Lansdowne, Jan. 6, Feb. 20–21 (Carter); Tinicum, Feb. 10 (Carter); Edge Hill, Dec. 24, 1906 (twenty) (Harlow); several, all winter at Frankford (Miller); St. Davids, Oct. 27, 1906 and Feb. 13–16, at Wayne, (Redfield); Princeton, N. J., Oct. 13–15, 1906, and two on May 16–17, 1907 (Rogers).

Poecetes gramineus, Vesper Sparrow. Pensauken, N. J., young left nest May 26 (Hunt); eggs May 12 (Harlow).

Ammodramus henslowi, Henslow's Sparrow. Three pairs seen near Cape May, N. J., May 24 (Harlow); Princeton, N. J., May 5 (Rogers).

Zonotrichia leucophrys, White-crowned Sparrow. Lansdowne, May 8 (*W. R. White*); Princeton, N. J., Oct. 14, 1906, and May 21, 1907, one each time (*Rogers*).

Zonotrichia albicollis, White-throated Sparrow. Arrived in autumn, 1906, at Frankford, Sept. 11, Radnor, Sept. 15 (*Patton*); Germantown, Sept. 20 (*Brewer*); Bryn Mawr, Sept. 24 (*Thomas*); last seen Bryn Mawr, May 8; Mendenhall, May 10; Swarthmore and Germantown, May 11; Media, Concordville and Kennett Square, May 12; Moorestown, N. J., May 13; Haverford, May 15; George School, May 17; Pensauken N. J., and Glenside, May 19; Lansdowne, May 20; Radnor, May 29 (*Pearson*); Frankford, May 30; spring migrants arrived at Olney Mar. 14; Yardville, N. J., Mar. 24; reached Easton Mar. 26, and Lopez, Apr. 29; Princeton, N. J., Oct. 13–Nov. 4, 1906, and April 7–May 12, 1907 (*Rogers*).

Spizella monticola, Tree Sparrow. Arrived in autumn, 1906; at Frankford, Oct. 1; Moorestown, Oct. 2; Radnor, Oct. 12; Princeton, N. J., Nov. 4; Easton, Nov. 17; last seen in spring 1907; Bristol, Mar. 17; George School, Mar. 30; Radnor, April 13; Tinicum, Apr. 16 (*Harlow*); Glenside, April 18; Princeton, N. J., Apr. 22; Easton, May 2.

Spizella pusilla, Field Sparrow. Radnor, Dec. 15, 1906, and Feb. 17; also at Tinicum, Feb. 22 (*Redfield*); Edge Hill, Dec. 29 (several) (*Harlow*); wintered at Tinicum (*Harlow*).

Junco hyemalis, Junco. Arrived in autumn, 1906; at Radnor (*Pearson*) and Bryn Mawr (*Thomas*), Sept. 28; Frankford, Oct. 1; Germantown, Oct. 4; George School, Pa., and Bordentown, N. J., Oct. 10; Media, Oct. 13; Princeton, N. J., Oct. 14; Easton, Oct. 25; Moorestown, N. J., Oct. 28; last seen in spring, 1907; Yardville, N. J., Media and Bryn Mawr, Apr. 21; Holmesburg, Apr. 22; Downstown, N. J. and Bristol, Apr. 23; Westtown, Apr. 24; Frankford and Perkasio, Apr. 27; Princeton, N. J., Glenside and Concordville, Apr. 28; George School, May 1; Easton, May 2; Pensauken, N. J., May 5; Marietta, May 10; Bordentown, N. J. and Radnor, May 12; Germantown, May 18; absent from the Alleghany plateau at Lopez from Dec. to Mar. 1.

Melospiza cinerea melodia, Song Sparrow. Generally resident

east of the mountains, most plentiful in the river bottoms; eggs May 1 at Frankford, and young out of the nest May 15 at Torresdale (*Miller*); arrived at Lopez on top of the Alleghanies, Mar. 8.

Melospiza georgiana, Swamp Sparrow. Tinicum, four nests with eggs, May 26 (*Carter*); wintered at Tinicum (*Harlow*) and at Bridesburg (*Miller*).

Passerella iliaca, Fox Sparrow. Lansdowne, Jan. 6, singing (*Carter*); Wayne last seen Mar. 28 (*Redfield*); Princeton, N. J., Nov. 4-Dec. 11, 1906; Mar. 17-Apr. 8, 1907 (*Rogers*); very scarce at Lopez where they are usually common in spring (*Behr*).

Pipilo erythrophthalmus, Chewink. Swarthmore, January 1 (*Harrower*).

Cardinalis cardinalis, Cardinal. Resident all along the low grounds of the Delaware from Trenton south, one pair wintered at Ardmore (*Baily*); young left nest May 15 at Wissahickon (*Pickering*) and Torresdale (*Miller*).

Zamelodia ludoviciana, Rose-breasted Grosbeak. Nest and eggs, Torresdale, May 28 (*Miller*); great flight on May 12 at Edge Hill, (*Harlow*).

Lanius borealis, Northern Shrike. Trenton, N. J., seen several times (*Abbott*); once at Beverly, N. J. (*Street*); Easton, February 5-26 (*Marx*); Princeton, N. J., February 17 (*Rogers*).

Lanius ludovicianus migrans, Migrant Shrike. One at Moorestown, N. J., March 8-29, (*Mickle*); Ardmore, March 16 (*Baily*); Bristol, March 3 (*Keim*); Edge Hill, November 22, one shot (*Harlow*).

Vireo flavifrons, Yellow-throated Vireo. At least three pairs bred at Yardville, N. J. (*Allinson*).

Vireo noveboracensis, White-eyed Vireo. Nest and eggs, Bustleton, May 23 (*Miller*).

Helminthophila chrysoptera, Golden-winged Warbler. Moorestown, N. J., May 12 (*Evans*); May 11, four at Swarthmore (*Palmer* and *Harrower*); Burlington, N. J., May 19 (*Carter*); Yardville, N. J., May 24, (*Allinson*); St. Davids, May 11 (*Redfield*); Edge Hill, May 10 (*Harlow*); Frankford, May 4 (*Miller*).

Helminthophila peregrina, Tennessee Warbler. Princeton, N. J., May 22 (Rogers).

Helminthophila rubricapilla, Nashville Warbler. Moorestown, N. J., May 8 (Mickle); Yardville, N. J., May 12 (Allinson); Edge Hill, May 12, (Harlow); Wayne, May 12 (Redfield); Frankford, May 3 and 21 (Miller).

Dendroica coronata, Myrtle Warbler. Ridley Park, January 5 (Harrower).

Dendroica castanea, Bay-breasted Warbler. Media, May 31 (Fussell); May 21 (Moore) and May 28 (A. Fussell); Swarthmore, May 11, 20, 29 (Harrower); Lansdowne, May 19 (A. D. White); Ardmore, May 19 (Baily); Bryn Mawr, May 30 (Thomas); Kennett Square, May 25 (Pennock); Yardville, N. J., May 19 (Allinson); Wayne, May 30 (Redfield and Pearson).

Dendroica striata, Blackpoll Warbler. Moorestown, N. J., still present June 16 (Evans); Ardmore, June 16 (Baily).

Seiurus moticilla, Louisiana Water Thrush. Moorestown, N. J., Sept. 9-10, 1906 (Evans); Fox Chase, Phila., April 22 (Miller).

Geothlypis philadelphia, Mourning Warbler. One at Lansdowne, June 11, it was heard singing for two or three days especially in the early morning, before it was identified (Carter); Edge Hill, one at close range May 12, and another June 1 positively identified (Harlow); Holmesburg, May 21, "identification positive" (Miller).

Wilsonia mitrata, Hooded Warbler. Media, May 21 (Allen); May 12 (Fussell); Ardmore, May 12 (Baily); Germantown, May 14 (Brewer); May 11 (Hill); George School, May 12, (Roberts); Radnor, May 11 (Redfield, Pearson and Patton); Princeton, N. J., May 11-12 (Rogers).

Wilsonia pusilla, Wilson's Warbler. Pensauken, N. J., May 19 (Hunt); Media, May 30 (Fussell); May 21 (Moore); Haverford, May 15 (Linton); Chestnut Hill, May 26 (Trotter); Kennett Square, May 30 (Pennock); Edge Hill, May 12 (Harlow); Wayne, May 18-30 (Redfield and Pearson); Princeton, N. J., May 16, 1906 (Rogers).

Wilsonia canadensis, Canada Warbler. Moorestown, N. J., still present June 4 (Evans).

Setophaga ruticilla, Redstart. Moorestown, N. J., still present June 4 (*Evans*); June 9, Ardmore (*Baily*).

Anthus pensilvanicus, Titlark. Kennett Square, Apr. 9, flock 30-40 (*Pennock*); near Trenton Apr. 19 during snow storm (*Abbott*); Tinicum, Apr. 6 and 13 (*Redfield* and *Pearson*); Ithan, Apr. 14; Wayne, Apr. 25-27 (*Redfield*); Princeton, N. J., Oct. 14-27, 1906, and Apr. 8-May 12, 1907 (*Rogers*); Frankford, March 19, and flock of 30-35 at Lawndale April 22 (*Miller*).

Galeoscoptes carolinensis, Catbird. Great flight of Catbirds and other small birds May 8 at Cape May, N. J.; moved southwest with fog during previous night, saw 40 to 45 Catbirds (*Hand*); nest and eggs at Radnor May 7 (*Pearson*).

Toxostoma rufum, Brown Thrasher. Media, Mar. 17 (*Moore*); Swarthmore, Feb. 12-17 (*Harrower*).

Thryothorus ludovicianus, Carolina Wren. Resident locally throughout the lower Delaware Valley; absent from Pensauken, N. J., this year (*Hunt*); one all winter at Ardmore (*Baily*); George School, rare, one seen Sept. 10, 1906.

Olbiorchilus hiemalis, Winter Wren. Generally reported as wintering in small numbers. Last seen in spring at Glenside and Easton April 6, George School April 16, Radnor April 18. Did not remain through depth of winter.

Certhia familiaris americana, Brown Creeper. Generally present throughout the winter; last seen at Princeton, N. J., April 21, Radnor April 28, Germantown April 6, Frankford, April 16, Moorestown, N. J., May 3 (*Mickle*); arrived at Frankford October 2, 1906, Radnor September 28, Germantown October 4; permanently resident at Lopez.

Sitta carolinensis, White-breasted Nuthatch. Generally reported as more plentiful than usual throughout the winter, mostly disappearing in spring.

Sitta canadensis, Red-breasted Nuthatch. Moorestown N. J., continually from early November to February 13 (*Evans*), also October 9-31 (*Mickle*); Media, September 21, October 2-3, 1906 (*Allen*), Haverford, May 6 (*Linton*); Holmesburg, May 3, plentiful during autumn, 1906, at Frankford (*Miller*); Wayne, September 28, October 27, 1906 (*Redfield* and *Pearson*).

Bæolophus bicolor, Tufted Titmouse. Resident in the low grounds of the Delaware valley; rare at Glenside, very rare at Ft. Washington; eggs May 10 Edge Hill (*Harlow*).

Penthestes atricapillus, Black-capped Chickadee. Radnor, Nov. 3-Apr. 3 (*Redfield*); Bristol, Nov. 18-Mar. 17 (*Keim*); Easton, Oct. 23-Apr. 4; present during winter at most stations in Pennsylvania.

Penthestes carolinensis, Carolina Chickadee. New Jersey—Vine-land, Downstown and Cape May resident; the status of some of the other records is in doubt, they may refer to either species.

Regulus satrapa, Golden-crowned Kinglet. Winter resident at most stations; Germantown, Oct. 4-Apr. 6; Radnor, Sep. 22-Apr. 27; Frankford, Sep. 21-Apr. 23; last seen at Glenside, Apr. 2; at George School, Apr. 21; Princeton, N. J., Oct. 14-Apr. 22 (*Rogers*).

Regulus calendula, Ruby-crowned Kinglet. Last seen at Wayne May 10 (*Redfield*).

Hylocichla fuscescens, Wilson's Thrush. Last seen at Wayne, May 30 (*Redfield*).

Hylocichla ust. swainsoni, Olive-backed Thrush. Remained at Ardmore, until June 8 (*Baily*); June 6, Oak Lane (*Miller*).

Hylocichla guttata pallasi, Hermit Thrush. Haverford, March 14 (*Linton*); last seen at Wayne, May 11, also seen Dec. 5, 1906 (*Redfield*).

Merula migratoria, Robin. Had eggs Frankford, April 27 (*Miller*); increased at Cape May, N. J., March 14, March 18 and 19 (*Hand*).

Sialia sialis, Bluebird. Had eggs Frankford April 29 (*Miller*); eggs April 5, Edge Hill, (*Harlow*).

City Ornithology

Mary S. Allen furnishes the following notes on birds observed in the Friends' Western Burial Ground, Sixteenth and Race Streets, Philadelphia.

AUTUMN MIGRATION, 1906.

Flicker, September 15.

Redstart, September 1, 3-5, 15.

Brown Thrasher, September 15 (four), 17 (two).

SPRING MIGRATION, 1907.

Flicker, April 17.

Blue Jay, May 11.

Song Sparrow, March 14 (three).

Junco, March 14 (ten).

Chipping Sparrow, April 26.

White-throated Sparrow, May 11 (three), May 23.

Fox Sparrow, March 14 (eleven).

Towhee, May 11 (four).

Ovenbird, April 26, May 8 and 11.

Brown Thrasher, May 11, 13 and 23.

White-breasted Nuthatch, May 11.

Hermit Thrush, April 17 (four).

Robin arrived March 14, remained all summer.

Bluebird, March 20 (four).

Abstract of the Proceedings of the Delaware Valley Ornithological Club for 1907

January 3, 1907. Annual Meeting. Thirty-five members present. The election of officers for the ensuing year resulted in the choice of: President, William A. Shryock; Vice-President, Samuel C. Palmer; Secretary, Herbert L. Coggins; Treasurer, Stewardson Brown. The resignations of Dr. A. P. Fellows and Bruce P. Tyler, associates, were read and accepted.

Mr. Rehn reviewed the more important ornithological publications of the year; and Mr. Coggins followed with remarks upon "Some Contemporary Ornithologists" in which the officers and active members of the club received attention. A light collation followed, in accordance with the custom of making the annual meeting essentially a social affair.

January 17, 1907. Twenty-one members present. Mr. Morris read a paper on the "Life of William Bartram" [see CASSINIA, 1906]. Mr. Stone called attention to Canon Tristram's collection of birds recently acquired by the Academy, a portion of which was on exhibition.

February 7, 1907. Twenty-one members present. Mr. Brown spoke on "The Birds of the Canadian Rockies" observed during June and July, 1906, while on a botanical trip to British Columbia.

Mr. Rhoads reported Bluebirds (*Sialia sialis*) at Haddonfield, N. J., Feb. 4, and Mr. Morris described a search for a crow roost near Doylestown, Pa.

February 21, 1907. Twenty-three members present. Mr. S. N. Rhoads read extracts from letters received from Mr. R. B. Simpson of Warren, Pa., relative to the bird life of that vicinity. The Solitary Vireo (*Vireo solitarius*); Morning Warbler (*Geothly-*

pis philadelphia); Black-throated Blue Warbler (*Dendroica caerulescens*); Blackburnian Warbler (*D. blackburniae*); Winter Wren (*Olbiorchilus hircalis*); Wilson's Thrush (*Hylocichla fuscescens*); Olive-backed Thrush (*H. u. swainsoni*) and Hermit Thrush (*H. g. pallasi*) were mentioned as summer residents, and in Forest County Mr. Simpson had found the Yellow-bellied Flycatcher (*Empidonax flaviventris*) in midsummer.

A note from Mr. Harlow was read recording the presence of a flock of about 800 Redpolls (*Acanthis linaria*) at Camp Hill, Pa., several of which had been secured.

Mr. Harrower reported a Myrtle Warbler (*Dendroica coronata*) at Ridley Park January 5, and a Brown Thrasher (*Toxostoma rufum*) at Swarthmore January 12.

March 7, 1907. Twenty-two members present. This being the meeting for spring election of members the following were elected Associates: Francis W. Rawle, Samuel C. Scoville and William M. Strang.

Dr. Trotter gave an interesting talk upon "British Birds" based upon his visit to England in the summer of 1906. He contrasted the bird life with that of Pennsylvania and also touched upon birds in English literature, and his interest in seeing various species in the same haunts that the famous writers and poets of England had described them.

Mr. Rehn recorded a Bald Eagle (*Haliaeetus leucocephalus*) near West Creek, N. J., February 22.

Dr. Jack stated that Robins (*Merula migratoria*) had been observed near Media every Sunday during the winter.

Mr. Baily reported a Woodcock (*Philohela minor*); Robin (*Merula migratoria*); Flicker (*Colaptes auratus luteus*) and eight Bluebirds (*Sialia sialis*) at Ardmore on March 3, and stated that he believed this to be an indication of spring migration. Mr. Rhoads differed from Mr. Baily. He regarded all these birds as winter residents and thought that as yet no migratory movement had occurred in the Delaware Valley; he further stated that in all his experience this was the first season in which there had not been marked migration previous to the present date.

March 21, 1907. Twenty-five members present. Mr. Hunt described two trips made during the past summer, one to Lake Sebago, Maine, and the other a canoe voyage up the Rancocas Creek, N. J., and commented upon the bird life of the two regions.

Mr. Rehn spoke of the distribution, history and relative abundance of West Indian Parrots and the extinction of several species.

April 4, 1907. Twenty-five members present. Mr. Stone gave a talk upon the winter homes of our commoner birds and their probable lines of migration.

A letter from Mr. Harlow described the continued presence of a pair of Short-eared Owls (*Asio accipitrinus*) at Edge Hill and their mating; all efforts to discover a nest failed.

April 18, 1907. Twenty-six members present. A letter was read announcing the death of Mr. Fredk. N. Owen, an Associate, December 27, 1905. Mr. Owen had been absent from the city for some years.

Mr. Wm. L. Baily described in detail the home life and habits of the Night Hawk (*Chordeiles virginianus*) and the Whip-poor-will (*Antrostomus vociferus*) illustrating his remarks by some beautiful lantern slides.

May 2, 1907. Twenty-two members present. Mr. Harlow described the nesting of a pair of Duck Hawks (*Falco peregrinus anatum*) on the Nockamixon cliffs along the Delaware, near Holland Sta. in Bucks Co., Pa., April 18, 1907. The nest was inaccessible, but from the difficulty experienced in trying to flush the female, he judged that she was incubating.

May 16, 1907. Seventeen members present. A general discussion was held on the Wild Pigeon (*Ectopistis migratorius*). Mr. E. W. Woolman recalled a very large flock that he had seen passing over Hestonville (now part of West Philadelphia) in 1850. The last specimen he secured was in the Lazaretto woods at Tinicum, Delaware Co., Pa., in 1869.

In a letter Mr. Pennock stated that he had seen small flocks every year at Kennett Square, Pa., from 1869 to 1873.

Mr. Stone presented a summary of specimens shot in eastern Pennsylvania and New Jersey so far as known to him, viz:

Frankford, Phila., Pa.,	July, 1878,	W. L. Collins.
Englewood, N. J.,	Sept., 1878,	F. M. Chapman.
Haddonfield, N. J.,	Mar. 22, 1879,	W. L. Abbott.
Marple, Del. Co., Pa.,	Oct. 2, 1881,	S. N. Rhoads.
Olney, Phila., Pa.,	Sept., 1885,	G. S. Morris.
Birmingham, Chester Co., Pa.,	Sept. 1, 1886,	T. H. Montgomery, Jr.
West Goshen, Chester Co., Pa.,	Sept. 9, 1887,	“ “
Morristown, N. J.,	Oct. 7, 1893,	A. B. Frost.
Canadensis, Monroe Co., Pa.,	Oct. 23, 1895,	Geo. H. Stuart.

A mounted group of seven specimens just purchased by the Academy of Natural Sciences was on exhibition. These were known to have been secured in this immediate vicinity but were without further data.

October 3, 1907. Twenty-seven members present. The resignation of Herbert L. Coggins from the secretaryship was accepted with regret and Chreswell J. Hunt was chosen for the unexpired term. The failure of Mr. Coggins' health necessitated an indefinite sojourn in the West.

Messrs. Stone and Keim described the "Bird Life of Garrett County, Maryland." As guests of Mr. Herman Behr they spent three days at Jennings, on the high mountains a few miles south of the border of Somerset Co., Penna. Most of the boreal birds of the Pennsylvania mountains occur at this point, but the Cardinal (*Cardinalis cardinalis*) and Tufted Tit (*Baeolophus bicolor*) pushed much farther up than they do on the Pennsylvania Alleghanies and often occur at least casually above the boreal species where the conditions are favorable.

A Raven's nest previously located by Mr. Behr was secured for the club collection. The birds had for some reason deserted it before the eggs were laid, though the nest was entirely com-

pleted. The Raven of this region is supposed to be *Corvus corax principalis*.

Mr. Harlow recorded a flock of Black Terns (*Hydrochelidon nigra surinamensis*) on the Delaware river above Philadelphia September 5; several were secured. Some Common Terns (*Sterna hirundo*) were noticed at the same time.

Mr. Baily reported finding a White-throated Sparrow's nest June 20 at Pocono Lake, Monroe Co., Pa.

October 17, 1907. Twenty-three members present. Mr. Rhoads under the title of "Bird Glimpses in Gilbert White's Country," described his experiences with British birds during the past summer. He had the pleasure of meeting Dr. Bowdler Sharpe at Selbourne. Mr. Rhoads considered that most of the birds famed in literature were far overrated when studied apart from their surroundings and their associations. The Starling he considered as very justly debarred from America and a most undesirable bird.

November 7, 1907. Twenty-two members present. Mr. Isaac P. Miller was elected an Associate and Mr. R. B. Simpson of Warren, Pa., a Corresponding member.

Mr. Rehn described the birds observed while on an entomological collecting trip through southern New Mexico and Arizona during July, 1907. Comments followed by Mr. Rhoads who passed through the same country in 1891.

Mr. Morris stated that he considered that the Mourning Dove was increasing about Olney, Pa., and Mr. Rhoads thought the same might be said with reference to Haddonfield, N. J.

November 21, 1907. Fifteen members present. Mr. W. E. Roberts read a paper on "Birds of Loon Lake, Franklin Co., N. Y," where he had spent July and August, 1907.

A letter from Mr. Strang reported the capture of a Saw-whet Owl and Florida Gallinule at Camden, N. J.

December 5, 1907. Twenty-seven members present. John D. Carter described "A Ten Days' Tramp Through the White

Mountains." The most interesting feature was his careful study of the songs of the Thrushes. The Olive-backed and the Bicknell's were frequently seen and heard, and Mr. Carter stated that the Pocono Mountain Thrush previously referred to as possibly Bicknell's was unquestionably the Olive-backed.

December 19, 1907. Eighteen members present. Mr. Pen-nock read a paper entitled "The South Shore of Indian River, Delaware" (see *antea*, pp. 28-43).

William B. Evans reported a Cardinal feeding upon the berries of the Virginia Creeper.

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- BURNS, FRANK L. The Ruffed Grouse (*Bonasa umbellus*) in Pennsylvania. *Wilson Bull.*, Dec., 1907, p. 157.
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- PEARSON, LEONARD S. A Recent Blue-gray Gnatcatcher (*Poliptila cerulea*) in Delaware Co., Pa. *Auk*, Oct., 1907, p. 447.

- PEARSON, L. S. A Persistent Phoebe. *Bird Lore*, Mar.-Apr., 1907, p. 83.
- PITCAIRN, WM. G. [Letter on variation in abundance of birds at Allegheny, Pa.]. *Oologist*, March, 1907, p. 41.
- Sixteen Christmas Day Bird Lists. *Bird Lore*, Jan.-Feb., 1907, pp. 25-27 (several by D. V. O. C. members).
- Various Records of the European Starling in N. J. *Bird Lore*, Sept.-Oct., 1907, pp. 209-210.

Bird Club Notes

THE Heermann portrait is from a photograph of a daguerreotype, and represents the naturalist fitted out as he was on some of his western expeditions. That it was not taken immediately upon his return is shown by the false beard which has been added to heighten the effect. The photograph was kindly loaned by Mr. Lee Siner, the present proprietor of Krider's Gun Store, and belonged to his father, John Siner, the associate and immediate successor of Krider, and like him, a close friend of Heermann.

* * *

The Club held sixteen meetings during the year, with an average attendance of twenty-four; fifty-one members attended one or more meetings during the year.

* * *

Mr. August Koch, of Williamsport, Pa., for many years a Corresponding Member of the Club, died suddenly on February 15, 1907, at Mohawk, Fla., where he was spending the winter.

He was born at Stuttgart, Germany, in 1837, and came to this country in 1850. He was interested in natural history from boyhood, and learned the rudiments of taxidermy from the curator of the Stuttgart Museum. He later developed great skill in this pursuit, which he practiced as a pastime during an active business career. The collection of mounted birds and mammals which he prepared is one of the finest in the state.

Mr. Koch was a thorough sportsman, both in his love of hunting and in his moderation in killing game. He was a thoroughly reliable ornithologist and our best authority on the birds of central Pennsylvania. As a friend he was kind and generous, and always ready to aid those with kindred interests who applied to him for information or assistance. Mr. Koch was an Associate of the A. O. U., and attended the first Philadelphia meeting in 1899.

* * *

The A. O. U. held its twenty-fifth stated meeting at the Academy of Natural Sciences of Philadelphia, December 9-12,

1907. Every effort was made by the local committee to ensure a meeting worthy of the twenty-fifth anniversary of the foundation of the Union, and as a result there was a larger attendance than ever before—21 Fellows, 16 Members and 54 Associates—a total of 91.

The dinner was held at Boothby's Café on the evening of December 10, and the next evening there was a smoker at the Academy. On Thursday afternoon, December 12, the visiting members were taken to Bartram's Garden, and on the 13th a party was conducted to Audubon's house at Mill Grove.

Most of the local D. V. O. C. members attended the sessions, and Messrs. Burns, Miller, Sharples, Surface and Todd, of our correspondents, were present. Messrs. Kester, R. F. Miller, Seoville, Street, Rawle, Dr. Tucker and Dr. Weygandt, and Otto and Hermann Behr, of the correspondents, joined the Union at this meeting.

Dr. Spencer Trotter presented a paper "The Ornithological Background," C. J. Pennock one on "Some Additions to the Birds of Delaware," Witmer Stone two on "Some Ornithological Doings of the Years 1850-55," and "The Value of Color-Patterns as a Generic Character in Ornithology."

W. E. Clyde Todd presented a paper "Notes on Woodpeckers and their Plumage."

* * *

At a meeting held at the Academy of Natural Sciences, April 4, 1907, the Pennsylvania Audubon Society was reorganized under the original charter granted the Society in 1886. The officers for the year 1907 are: President, Witmer Stone; Vice-President, Nathaniel E. Janney; Secretary, Miss E. W. Fisher; Treasurer, Wm. L. Bailly. The Society's office is now at 524 Walnut St., Room 22.

On May 2d Mr. William Dutcher addressed the Society on "Recent Progress in Bird Protection."

* * *

The Club lost two officers during the year, Vice-President Samuel C. Palmer having removed his residence to Cambridge, Mass., while our versatile Secretary, Herbert L. Coggins, has gone to Sacramento, California, for an indefinite stay.

OFFICERS AND MEMBERS

OF THE

Delaware Valley Ornithological Club.

1908.

WILLIAM A. SHRYOCK, *President.*

STEWARTSON BROWN, *Vice-President.*

CHRESWELL J. HUNT, *Secretary*, 225 N. Fifty-third St., Phila.

SAMUEL WRIGHT, *Treasurer*, Conshohocken, Pa.

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SAMUEL WRIGHT, Conshohocken, Pa.	1892

* Date indicates year of election to Club.

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DECEASED MEMBERS.

Died.

JOHN FARNUM BROWN, Active member	May 13, 1894
WALTER D. BUSH, Corresponding member	August 11, 1904
JOHN W. DETWILLER, M. D., Corresponding member	September 26, 1898
LARUE K. HOLMES, Corresponding member	May 10, 1906
JOSIAH HOOPES, Corresponding member	January 16, 1904
AUGUST KOCH, Williamsport, Pa., Corresponding member	February 15, 1907
GILBERT H. MOORE, Associate member	May 28, 1899
FREDERICK N. OWEN, Associate member	December 27, 1905
WILLIAM PATTERSON, Corresponding member	August 27, 1900
EDWIN SHEPPARD, Associate member	April 7, 1904
WILLIAM W. SMITH, Associate member	July 3, 1892
SAMUEL W. WOODHOUSE, M. D., Honorary member	October 23, 1904

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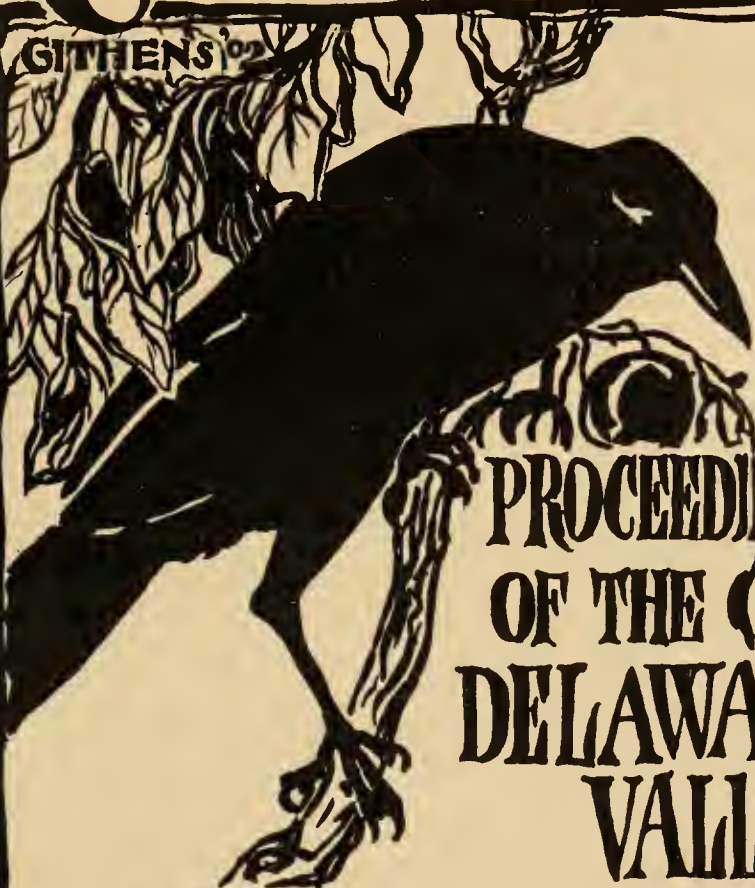
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CASSINIA

A BIRD ANNUAL

GITHENS



PROCEEDINGS
OF THE
DELAWARE
VALLEY

ORNITHOLOGICAL CLUB
OF PHILADELPHIA

1908

CASSINIA

An Annual Devoted to the Ornithology of
Pennsylvania, New Jersey, and Delaware.

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PUBLICATIONS OF THE D. V. O. C.

- The Birds of Eastern Pennsylvania and New Jersey**, by Witmer Stone, pp. 176 with two maps and portrait of Alex. Wilson. One Dollar and a-half. (Post paid \$1.62)
- Abstract of Proceedings**, Full Set Nos. I-IV. (1890-1900) pp. 98, Fifty cents
- Cassinia**, published annually beginning with 1901; comprising papers relating to the Ornithology of Pennsylvania, New Jersey and Delaware, and an abstract of the proceedings of the Club. Edited by Witmer Stone. Subscription price Fifty cents

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George Ord

CASSINIA

PROCEEDINGS OF THE DELAWARE VALLEY ORNITHOLOGICAL CLUB

No. XII.

PHILADELPHIA, PA.

1908.

George Ord

BY SAMUEL N. RHOADS

Science owes much to men almost unknown to fame and whose names but rarely appear upon the page of the historian or biographer. It is indeed strange that we must place in this class one who accomplished so much, in a quiet, unassuming way, as did George Ord, the companion, patron and literary executor of Alexander Wilson, the ornithologist. The seeker after materials for even a brief memoir of this once honored and respected savant, who, between the years 1815 and 1858 was accorded nearly all the highest offices of trust within the gift of the Academy of Natural Sciences of Philadelphia and the American Philosophical Society, is puzzled at the scarcity of recorded data. When he died, in 1866, the Philosophical Society appointed Isaac Lea to prepare an obituary notice of him, but no such tribute can now be traced either in print or manuscript. By the Academy of Natural Sciences no action whatever was taken.

Consequently, in the brief space of time and pages allotted for this article, only a few facts not already stereotyped in some of the biographical dictionaries can be presented regard-

ing the character and life-work of George Ord. He was born March 4, 1781, but whether in Philadelphia or England I have been unable to ascertain.

According to the Philadelphia Directory of 1796, Ord's father, also named George, was a sea captain, living at 354 South Front Street. This is confirmed by his tombstone in the Old Swedes churchyard, which further states that he was born in Great Britain, March 26, 1711, and died in Philadelphia, October 13, 1806. On the same stone is the notice of his wife Rebecca, who died in 1823 (1825 ?) as nearly as can be deciphered. A further study of the old directories shows that Capt. George Ord became a ship chandler and rope-maker on Willings and Francis Wharf in 1798, and that sometime after, say about 1800 took his son George, Jr., into partnership—"George Ord and Son, Ship Chandlers." Ord's home at that time, and ever afterward, was in his father's house on Front Street. After the death of his father in 1806, young George became partner with his mother, as "George Ord & Co.," in the same business. His mother was a Swede, one of five married daughters of George and Judith Lindemeyer, probably very early settlers in the city. Her parents' graves adjoin those of the Ords, and her married sisters' in a corner against the northwest shoulder of the church. How long Ord actively continued his father's business is not exactly determined, but about 1829 he ceases to be listed as a ship chandler. He was always known to his later associates as a wealthy gentleman of leisure, though far from idle in his chosen scientific pursuits. He married, presumably, about 1815, and had a daughter, who died in infancy, and one son, Joseph Benjamin, who was an artist of much ability in the painting of fruit studies. He was recorded as a portrait painter in 1835 and a picture restorer in 1855. Ord's wife was for many years an inmate of the Pennsylvania Hospital, owing to a mental affliction, and it was largely due to his gratitude for their good care of her that he gave that institution various sums, amounting to about \$20,000, the greater part of which was devoted to a fund for the study and cure of mental diseases.

Just when he began to take an active interest in nature study

is not apparent, but it probably began in youth, and was no doubt stimulated by association with the coterie of more advanced naturalists who finally organized the Academy of Natural Sciences in 1812. He was elected a member and a curator of that body in 1815, and made their vice-president in 1816, a sufficient indication that the worth of his editorial labors on Wilson's Ornithology was being recognized. That his education and literary attainments were already of a high order is not only attested by Waterton's letter of introduction, quoted later, but is further shown by his being appointed one of the original members of the Publication Committee of the Philadelphia Academy in 1817.

How gladly would we know the history of his earlier acquaintance with and growing friendship for Alexander Wilson. We fondly hope there may be old letters yet preserved which will shed more light upon that sacred chapter in American ornithology. Ord was Wilson's junior by fifteen years, and at the time the latter seriously began the preparation of his Ornithology was only twenty-four years old. He accompanied Wilson on many of his bird excursions, and was with him on his last visit to Great Egg Harbor, N. J., in the spring of 1813. It is safe to say that to no single person did the author of the "American Ornithology" owe more by way of personal and financial encouragement than to George Ord. If Wilson had not enjoyed this loyal patronage during his life, or had been deprived of so talented and yet so modest a biographer to finish his uncompleted labors, we can hardly estimate the resultant loss to both the student and the lover of birds in the present generation. The history of Ord's editorial labors in Wilson's behalf are better known to-day than perhaps any other of his literary efforts. For a history of the additional volumes and editions of the "American Ornithology" which he edited, the reader is referred to Dr. Walter Faxon's article in the eighteenth volume of "The Auk," 1901, pages 216-218.

In all these Ord strove to put himself into the background, and for that reason did not receive the credit due him until after his death. His "Life of Wilson," however, appeared under his full name, and it is as the author of that work more than

of any other single publication that he is popularly known, for the majority of his writings were anonymous or signed only with initials. The biographic notices of Ord state that he employed much of his leisure in lexicographic researches. I am informed by his cousin Mr. Gregory B. Keen, that Ord compiled much data for the first edition of Webster's dictionary. This was used without acknowledgment by Webster, a fact silently resented by Ord until Webster wrote him some years later for assistance on the third edition. In reply Ord reminded Noah of his discourtesy, and being a great admirer of Dr. Johnson wrote him that if he would make his new edition conform to the Johnsonian spelling he would aid him. Webster was compelled to refuse. Soon after, Latham, of London, secured from Ord the whole MSS. of nearly forty years' work in philology, and in every instance where he used it in compiling his new edition of Johnson's Dictionary he makes acknowledgment to the "Ord MSS." Alexander Wilson secured his work of compiling the natural history portion of Bradford's American edition of Rees' Encyclopædia in 1806, and there is little doubt that Ord, as much as any one, secured him this important employment, which might be called the "first edition" of Wilson's "Ornithology." While we have no data at hand to prove it, it is more than probable that Ord assisted Wilson greatly in this labor besides contributing to other departments of this, the largest literary undertaking attempted up to that time in America.

After the death of Wilson, in August, 1813, Ord, then thirty-two years of age, completed the "Ornithology," editing Volume VIII and writing all the text of Volume IX. This work, however, does not appear to have exhausted his energies, for Johnson and Warner, publishers of Philadelphia, induced him to compile the zoölogical portion of their so-called "Second American Edition" of Guthrie's Geography. This was published in 1815. Strangely enough, only three copies of this work are known to exist, namely, Ord's private annotated copy owned by Dr. Solis Cohen of Philadelphia, another lately obtained in Wilmington, Del., by my friend C. J. Pennock of Kennett Square, Pa., and an excerpt of the zoölogical portion

in the library of the Academy of Natural Sciences. Owing to the rarity, as well as the scientific value, of Ord's contribution to this work the writer re-published that portion in 1894. The reader is referred to the Introduction of that reprint for an estimate of Ord's modest services to North American zoölogy in that connection. Briefly stated, it appears to be the first systematic work on the zoölogy of North America by an American. Several species of mammals and birds are there described and named for the first time, and four new bird names there given are tenable. Most of these novelties were secured by Lewis and Clarke's Expedition, then lately returned. On page 314 Ord pays tribute to the labors of his beloved Wilson, stating that he had "published and prepared an account of two hundred and sixty-five species, fifty-four of which were nondescripts, when the Almighty disposer of events saw fit to close his useful labors by death;" and in a foot-note adds: "He left drawings of thirteen species more." Ord was so prominently the loyal champion of Wilson's cause that on more than one occasion he was forced to throw aside his anonymous cloak and openly enter the lists in defense of his deceased friend. The most striking of these contests was waged against Audubon's accusations of plagiarism on Wilson's part made in the last volume of the Ornithological Biography. In Ord's rejoinder, which was published in the Proceedings of the American Philosophical Society (Vol. I, pp. 272 *et seq.*), he places Audubon in a most unenviable light, not only disproving the charge against Wilson, but showing that Audubon had been guilty in more than one instance of stealing from Wilson without acknowledgment. A copy of this article was also sent to the Linnæan Society of London, of which Ord was a Fellow. In his letter of transmittal, a copy of which is in the archives of the Academy of Natural Sciences of Philadelphia, he states:

"There are some circumstances related in it which may give rise to reflections by no means advantageous to the reputation of Wilson's calumniator. However he who resorts to the stiletto can have no reason to complain should its point be reverted to his own breast. The career of this adventurer in Great Britain has been truly a brilliant one, he has left an impression on

your community of no ordinary kind but whether it be for good or evil only time can determine."

Ord was a great friend of Charles Waterton, the English naturalist, South American traveler and author. This gifted and rather erratic enthusiast, so much Ord's reverse in many characteristics, was born one year later and died one year earlier than his comrade. They traveled together in England and Europe,* and kept up a lively correspondence, some of which is in the archives of the Academy.

One of the most famous international bird-controversies arose in 1833-'34 between Waterton and Audubon regarding Audubon's disbelief in the use of the sense of smell by the Turkey Vulture in the discovery of its food. Audubon's views were embodied in a paper presented to the Wernerian Society of Edinburgh soon after his arrival in Scotland and which constituted his first publication. It was promptly attacked by Waterton and vigorously sustained by Audubon's admirers in both continents. Swainson, Bachman and a half-dozen more kept the magazines busy in this quarrel. It is supposed that Ord may have instigated this trouble and retired behind the scenes as Waterton's second. A letter from the latter to Ord, dated March 4, 1834, says: "You will see that the Charleston parson [Bachman], Doctors, Surgeons and Professors are up in arms against me and are determined to cut off the Vulture's nose. But do not be alarmed for me, I promise you that I will answer them to your heart's content and tomorrow I shall send up a paper to Loudon for his May number which will make your Philosophers appear very small and put Audubon's claim to literature and ornithology in so clear a light that no one will be in doubt hereafter * * * Audubon's gulled friends and supporters in London are in the highest spirits and feel sure that I cannot answer the Charleston letter. By the first of May next their crowing will cease." Time has proved that Ord and Waterton were on the winning side in this debate.

The following extract from a letter of introduction given by Waterton to Ord, and found among the latter's papers, gives us

* Ord was in Italy in 1823 and in England and France in 1851.

some insight into his character and attainments: "You will find him a most delightful acquaintance, with vast knowledge and extended abilities." Waterton in another letter, after urging Ord to visit him again at his English country seat, says: "I am fully of the opinion that your polished mind was never destined to waste its learning in Pennsylvania's matted woods." Audubon, in this connection, refers casually to Ord's knowledge of languages (Audubon and his Journals, Vol. I, p. 189); when describing a meeting of the Royal Society of London, December 18, 1826, he notes: "Prof. ——— gave a long, tedious and laborious lecture on the origin of languages. * * * It seemed a very poor mess to me. * * * My friend Ord would have doubtless swallowed it whole."

As time advanced and his physical activities lessened, Ord, at sixty years of age, writes under date of 1841: "My natural history studies are nearly at an end. As age creeps upon me I feel the necessity of retirement, but in yielding to that necessity I derive consolation from pursuits which more than counterbalance the pleasure of those which I relinquish." This alludes, no doubt, to his philological studies, which I am assured both by Mr. Gregory B. Keen and Dr. I. Minis Hays of Philadelphia, who were for some years associated with him, were of the most profound character. His valuable library, especially rich in such works, from fear of fire, was removed by him from his house to a room in the Philadelphia College of Physicians. Part of it remains there, part is in the Ridgway branch of the Philadelphia Library, and the remainder was purchased by Dr. J. Solis Cohen of Germantown.

Respecting Ord's personality I am much indebted for a lively description from both of the above-named gentlemen, much of which, however, is hardly germane to a sketch of this character. Dr. Hays remembers him as a tall, rather spare and decidedly stoop-shouldered man, using a cane in his walks about town. An abundant shock of gray hair covered his head, even in old age. He talked deliberately, but once aroused upon a favorite theme, with much enthusiasm. His benign countenance comported well with a tender-hearted, kindly disposition. His literary humility, care and rigorous self-censorship not only

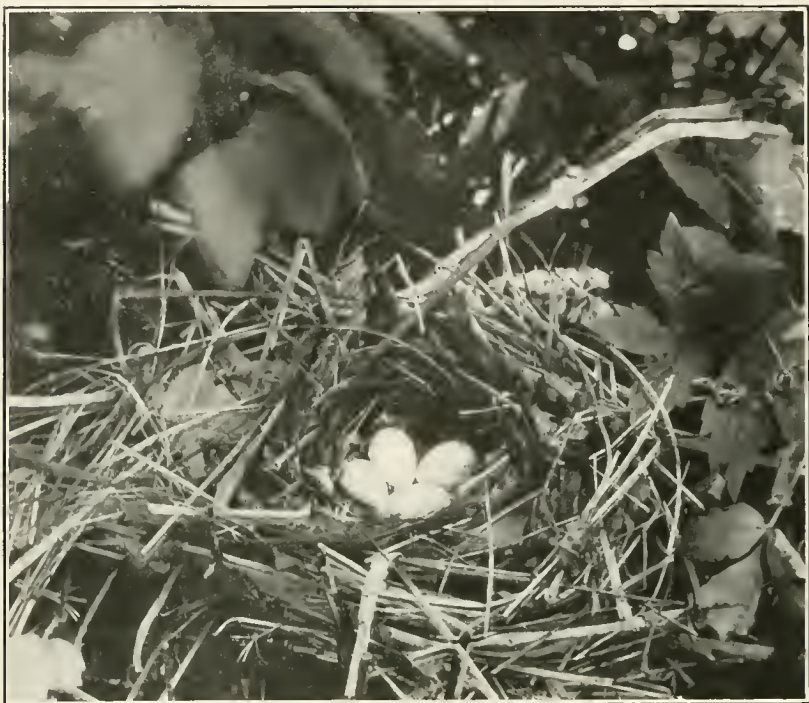
deprived the world of much that was worthy of publication, but was carried to such an extreme that the tasks of his biographer have been increased tenfold.

The portrait which prefaces this sketch was etched from a photograph of the oil painting supposed to have been painted by his son, Joseph Benjamin Ord, now in the gallery of the Academy of Natural Sciences of Philadelphia. It represents him somewhat past middle life.

George Ord lived to be eighty-five years of age, dying in 1866. He was buried in Old Swedes churchyard, Philadelphia, in the old family plot of the Lindemeyers, Swedish grandparents on his mother's side and early settlers on the Delaware. Not far from Ord's grave is the simple monument over the tomb of Alexander Wilson, that congenial and gifted fellow-spirit whom fifty years before his comrade had sadly laid to rest.

A chronological list of George Ord's appointments to honor and service in the two leading American scientific societies of his day are as follows: Elected a member of the Academy of Natural Sciences, September, 1815; Curator, December, 1815, to December, 1817; Vice-President, December, 1816, to December, 1834; and original member of the Publication Committee, 1817 to January, 1821, serving again 1832 to 1833. Elected a member of the Philosophical Society, October 17, 1817; Secretary, 1820 to 1827 and 1829 to 1831; Vice-President, 1832 to 1835; Councilor, 1839; Treasurer and Librarian, 1842 to 1847; and President of the Academy, December, 1851, to December, 1858.

Ord's scientific papers listed in the catalogue of the Royal Society number fourteen, two being in conjunction with Thomas Say. Four relate to birds. His other works comprise the completion of Wilson's Ornithology; two subsequent editions of this work in 1824 and 1828-29, both containing original matter; the "Zoölogy" in Guthrie's Geography; the Life of Wilson and a beautifully written Life of Thomas Say, another of his friends; and one of C. A. Lesuer, together with his philological contributions.



PHOTOS BY THOS. H. JACKSON

NEST AND NESTING SITE OF THE MOURNING WARBLER.

The Mourning Warbler in Warren Co., Pa.

BY THOMAS H. JACKSON

I have never met with the Mourning Warbler in my home county of Chester during its spring and fall migrations, although there are a few records of its having been taken here. It was with a good deal of pleasure then, that I found myself listening to the charming song of this bird among the mountains of Warren county, Pa., on the 30th of May last.

Mr. R. P. Sharples and myself reached Warren about 9 o'clock on the morning of that day, and in company with our friend, Mr. R. B. Simpson, started up the valley of Morrison's run, a clear mountain stream that empties into the Allegheny river east of the town. The trees and bushes were dripping from frequent showers, between which the sun occasionally shone with a sultry heat.

As we entered the ravine a song entirely new to me came from a clump of ferns and blackberry bushes. At first I took it to be the well-known melody of the Kentucky Warbler; the first three bars of its song were a reproduction of that bird's, but the latter part of its performance was the liquid melody of the House Wren's song. Mr. Simpson assured us that it was the Mourning Warbler. On this occasion we tried our best to get a good glimpse of the singer, but all we could see was an occasional shadow flitting near the ground, and if approached too nearly the song would cease, and possibly a glimpse of the bird would be had as he disappeared in another part of the thicket.

We found these birds in full song in nearly every favorable locality—with just such surroundings as the Maryland Yellow-throat would choose for its nesting-place—in thickets near the edge of woods, among briar-patches along the roadside, and among the nettles and weeds in the partly wooded bottoms

along the Allegheny river, and in many places they seemed to be equally abundant with the Yellowthroats. In a large clearing or "slashing" about three miles up Morrison's run we heard at least six different males singing, each in his own special territory. Many hours of systematic search failed to locate a nest here, although we must often have been very near to one, as the singing bird simply shifted around from one bush to another within a radius of a few rods.

Between times we found interest in watching a colony of Chimney Swifts flying in and out of the top of a huge hollow pine that had been broken off about forty feet from the ground. In this same clearing a noisy brood of Hairy Woodpeckers had left their nest, and were creeping around over the home tree. A Pileated Woodpecker was calling from the near-by timber. An Olive-sided Flycatcher was busy carrying twigs, broken from a dead hemlock near by, to a group of smaller hemlocks in the middle of the slashing. With a field-glass we could see her carefully arranging them in nest form on a lower, horizontal limb, and frequently uttering her peculiar call in answer to that of the male which perched on the top of a tall dead tree near by, making frequent excursions after insects.

The first nest of the Mourning Warbler that we located was on a bunch of ferns in an open space in the woods, close beside the stream. We saw and heard the birds there frequently, but it was not completed, and was possibly abandoned because of our frequent presence in the vicinity. Another nest with one egg was found on the edge of the cemetery in a clump of briars. It was placed very close to the ground, and though we watched for the bird each time we were near the nest, only at the last visit did we get a sight of her sufficient to make her identity sure. The nest still contained but a single egg, apparently well incubated.

About a mile below the town, and close beside the river, there is a grove of scattering trees covering perhaps six to eight acres of lowland that is subject to overflow at times. Over this entire tract there is a dense growth of nettles, briars, and a variety of rank weeds that covered the ground from two to three feet deep. Two pairs of Mourning Warblers were known to be located somewhere in this jungle, although on that morning,

June 5th, we did not hear their song once; we decided to give the ground a thorough search, and from eight to eleven o'clock worked hard to cover every possible hiding place where the nest might be concealed. Mosquitos, gnats and nettles did not add perceptibly to the pleasure of the search, but as one of our main objects in coming to Warren county was to see and hear the Mourning Warbler in its summer home, no trouble or discomfort was considered in accomplishing this end.

Across the river in the grass flats, ten or twelve pairs of Bobolinks were nesting in the clover, then about knee high, and the males were in constant song, and to me, accustomed to but a few days of their presence in the spring migration, their concert was a great treat.

As we were about to give up the search, Mr. Simpson walked round to the edge of the thicket where it merges into a grass field, and there at the very edge, among the tall weeds, he flushed a bird from the nest. She was off and out of sight too quickly to determine her identity, but as I was photographing the nest she gradually became bolder, and finally both birds came into plain view, proving beyond doubt the identity of our prize. It had the appearance of having originally been placed on the ground, but by the rapid growth of the weeds with which it was entangled had been raised about six inches. The outside of the nest was made of coarse weed-stalks and stems; so arranged that the nest was much broader one way than the other, the greatest width over all being nine inches, while its shortest diameter was but six inches. It was four inches in depth over all, while the cup was two and a quarter inches deep. The second layer was composed of dry oak leaves, and next came a substantial layer of grape-vine bark in strips, some of them a foot long and one-eighth to one-quarter inch in width. The inside lining was a thin layer surrounding the entire cup of the nest, and consisting of strong, hair-like filaments of a reddish color, not unlike in appearance the fruit stalks of the hair-moss, used by the Worm-eating Warbler for the same purpose, excepting that they are much longer and tougher than that material.

The eggs were four in number and measured .81 x .52, .80 x .55, .79 x .55 and .78 x .52 (in hundredths of an inch). The

ground color is pearl, three of them having obscure lilac markings wreathed about the greater end, with a few bolder spots of reddish-brown, the fourth egg being thickly spotted with the brown shade evenly over the entire surface, similar to the eggs of the White-breasted Nuthatch. All of the eggs are quite pointed.

In concluding these notes it would perhaps be of interest to speak of the general character of the bird life as we met with it in Warren county.

The country is such as would naturally attract a great variety of birds. The valley of the Allegheny, at an elevation above sea level of 1100 feet here, has large tracts of meadow lands that furnish a congenial home for Bobolinks, Prairie Horned Larks, Savannah Sparrows, Meadow Larks and other field-loving birds, while the damp, dark hemlock and pine forests in the mountains still found in this county in large and well-preserved tracts furnish a congenial home for the Winter Wren, Olive-sided, Hermit and Wilson's Thrushes and Solitary Vireos, while Black-throated Blue, Black-throated Green, Parula Pine and Blackburnian Warblers were in evidence on every excursion we took into these woods. Occasionally the cry of the Pileated Woodpecker or his vigorous hammering on some dead tree in the depths of the woods proclaimed his presence.

Red-shouldered Hawks were much commoner there than the Redtails are in Chester county, and little parties of them were often seen soaring over the woods as though the parents were teaching the young the art of hunting.

Conspicuous by their absence were the Worm-eating, Black and White, Kentucky and Blue-winged Warblers, as well as the Yellow-breasted Chat, though many of our commoner species seemed less abundant here than in Chester county. It was a pleasure to meet our old winter friends the Juncos, and almost the first nest we found was one of these under the edge of a bank, close beside the path, placed exactly as we often find the nest of the Song Sparrow, with partridge-berry and ferns gracefully overhanging. Four handsome eggs were in the nest, and were apparently well incubated. The Turkey Vulture that is so common in Chester county the year round is there almost an

unknown bird, and Mr. Simpson I believe has the only one taken in Warren county.

In this connection I would like to add that Mr. Simpson's museum of birds, mammals and reptiles, collected and skilfully mounted by his own hands, and mostly from within a short distance of his home, forms one of the most complete and interesting local collections I have ever seen.

One is surprised and gratified to see so many species of birds here, only a little over a hundred miles north of the Delaware Valley zone, that do not occur in Chester county during the breeding season. And when one has spent a day in the mountains with Mr. Simpson he begins to realize how it is that he finds so many good things, and how he seems to know just when and where any given bird or animal may be looked for successfully. Just as ready to climb a hundred-foot pine as to scale a five-hundred-foot mountain, the fellow that follows his pace at the end of a week begins to wonder where he can find a new pair of legs.

During our week in Warren county, we listed seventy-two species of birds, forty-two of which we found nesting, and of the seventy-two, twenty-eight species do not nest in Chester county.

Some Birds of a Maurice River Farm

BY CHRESWELL J. HUNT

On the afternoon of June 6th we left Millville, N. J., on board the *Duma*, a forty-foot cabin-launch, and ran nine miles down the river to Buckshutem, where the owner of the boat has a little hundred-acre farm. It was my first trip on the Maurice river below the Millville dam, and I was surprised at the marked difference in both the character of the stream and the country bordering it, the crookedness of the river and the amber color of its water being the only things that the river below the big dam holds in common with the river above Union Lake.

Now the pine-barren country had disappeared, and the river was bordered by high sand-banks or wriggled its snake-like course through stretches of tide-marsh. I have never traveled a more crooked stream. We were always it seemed retracing our course.

The twenty-eight-foot dam-breast at Millville also marks a distinct change in the bird-life. The little trill of the Pine Warbler, so common about Union Lake, was no longer heard. Its place was now filled by the gurgling song of the Long-billed Marsh Wrens, while great numbers of Bank and Tree Swallows skimmed over the river. Fish Hawks were fairly common, and several of their huge nests could be seen in the tops of dead trees. Spotted Sandpipers were abundant, King-birds much in evidence and a Turkey Buzzard always in sight. The trip to Buckshutem was not conducive of a large list of birds, for as the *Duma* drew three feet of water it was necessary to keep well to the channel; also, two eight-horsepower gasoline engines going full tilt make sufficient music to render indistinct the bird songs that might be heard from the shore.

On reaching Buckshutem the *Duma* was headed into a sort

of little inlet, where the farm came down to the river. This little natural harbor proved an ideal retreat, for when within the river with its passing boats was entirely hidden by a thick fringe of trees and alder bushes, from which Yellowthroats, White-eyed Vireos and Red-winged Blackbirds scolded at our approach, while in the other direction stretched a grassy meadow.

As the *Duma* nosed her way up to the bank and came to a stop, my attention was at once attracted to this green meadow, for my ear caught a familiar little bird note—a song that once heard is not likely to be forgotten. Almost a year had passed since I last heard it, and I was glad to renew my acquaintance with Henslow's Sparrow. The little meadow seemed full of them. At least a half-dozen birds were in song at the time. It was almost sundown, and a host of birds were singing—Orchard and Baltimore Orioles, Robins and Brown Thrashers—but as I recall that evening aboard the *Duma*, it is the little two-syllabled song of the Henslow that made the deepest impression on my memory. The song is usually described in the books as “che-tick.” Mr. Rhoads (CASSINIA, 1902) has likened it to “amen,” while Mr. Pennock (CASSINIA, 1907) thinks “switch-em” more nearly fills the bill. To my ear none of these words give a correct idea of the song, except as they convey a two-syllabled utterance. Indeed I think them rather misleading, for to me “che-tick,” “amen” and “switch-em” imply that the accent should be upon the first syllable, while the *second* syllable should be the stronger of the two. I believe Mr. Ernest W. Vickers (*Wilson Bulletin*, Sept., 1908) comes nearer the real thing when he describes this song as resembling “tis-zeek,” the accent upon the “zeek.” When singing the bird throws the head back with a jerk and seems to fairly fling out the song. It is claimed the bird also has a longer song, more like the song of the Yellow-winged Sparrow, but I have never been fortunate enough to hear other than this little two-syllabled one.

The night was spent aboard the *Duma*, for one of my friends is somewhat of a bird enthusiast, and we were to be astir before sunrise to hear the morning chorus. So when the mosquitos

became unbearable upon deck we retreated to the cabin, which was rigged mosquito-proof, and climbed into our bunks, while outside the Night-hawks skimmed about and the Whip-poor-wills still sang. In that evening chorus there had been one bird-song missing—there were no Wood Thrushes. I had never before failed to find them in such a locality. They are found about Union Lake, but below Millville they were absent.

The following morning (June 7th) we were greeted with the usual bird chorus enjoyed by early risers in similar localities about Philadelphia, with three marked differences, no Wood Thrush, no Swamp Sparrow (similar marshes along the Delaware would be full of them), and the whistle of the Bobwhite played a major part in it. I have never seen so many Bobwhites in so small an area, but I later found that they were not so plenty on the adjoining farms, which was no doubt due to my host's strict game laws. All day of June 7th was spent upon the farm, with the exception of a short walk to Buckshutem Pond, in the hopes of finding a Wood Thrush there; but although I would consider it an ideal Wood Thrush country none were found. I have never seen so much with so little effort as I did that June day on that little hundred-acre farm. Birds were everywhere, and surprises in wait at every turn. The ground here is low, the highest spot on the place being scarcely twenty feet above sea level. They never suffer drought. Indeed, it is necessary to have the fields ditched to carry off the excess water supply. Song and Field Sparrows were found everywhere; Vesper Sparrows were common about the cultivated fields; Chipping Sparrows haunted the orchard and shade trees about the house; Yellow-winged Sparrows were found in a grassy field just over the line on an adjoining farm, and Henslow's Sparrows abounded in the low meadow land near the river.

One of the features that contributed toward the making of this red-letter day was the finding of a nest of the Henslow Sparrow. Of course I had more or less hopes of finding a nest, but when I recalled the unsuccessful expeditions of D. V. O. C. members on a like quest, it seemed almost like wishing for the moon. So it was with little hope of actually finding a nest that I started across a field where several Henslows were singing. I had got-

ten to about the center of the field and was trying to locate one of the singers when a bird shot up almost from under my feet. I marked the spot and followed up the bird to identify it beyond all doubt, although I was so close when it took wing that I could see distinctly the reddish back and greenish head. Close observation with the field-glass proved it to be a Henslow, so I retraced my steps to the spot from whence it had taken wing, and to my delight there was the nest and five eggs. The nest (now in my collection) was placed upon the ground among the thick grass which was *not* arched above it.

I was told about a nest, containing three eggs, that a bird had built in the strawberry patch and had deserted, probably on account of its being so near the lane where the wagon was frequently passing. It proved to be a Spotted Sandpiper's nest, and was scarcely more than a hollow in the ground, lined with next to nothing, placed among the strawberry vines. Later in the day, while passing the strawberry-patch, I flushed a Spotted Sandpiper from a nest and four eggs. This nest was similarly placed in a strawberry row, and only about twenty yards from the abandoned nest. When I flushed the bird from the nest she flew out across the strawberry rows with tail spread and the feathers on the head raised in a pronounced crest.

The note of the Red-headed Woodpecker was a characteristic sound, and Downy Woodpeckers and Flickers were much in evidence.

A Tree Swallow had a nest in the trunk of an old apple tree, and Black and White Warblers came to the shade trees near the house.

One Little Green Heron, one Hummingbird, a pair of Tufted Titmice, and a family of Carolina Chickadees were found.

A trip to the scrub-oak woods on the back of the place added the Chewink and Ovenbird to the list; Cardinals, Indigobirds, Chats and Yellow Warblers frequented the alder thickets; the orchard harbored Bluebirds, House Wrens and Crested Flycatchers; Phoebe and Kingbirds ornamented numerous fence posts; Wood Pewees and Red-eyed Vireos sang from the shade trees; Barn Swallows circled over the fields; the sky seemed filled with Swifts and Martins, and Goldfinches dipped here

and there, while tuneful Meadowlarks and harsh-mouthed Grackles voiced their sentiments.

The Bobwhites were everywhere. They were always exploding from under my very feet, and in a dry spot under a row of trees near the Henslow's meadow they had dusted themselves so persistently that the ground looked much like some sunny corner in a well-filled chicken yard.

Two weeks previously I had found the Hooded Warbler at home in Cape May County, and had heard its song for the first time, so when I heard a somewhat similar song coming from a small patch of wet woods, I went over expecting to add this bird to the list, but instead I found a male Redstart. A late migrant no doubt, but when on August 7th I found a male Redstart near the Maurice River near Porchtown, I began to wonder if the bird could have spent the summer hereabouts. Most likely this was an early fall migrant. Be this as it may, one might count on seeing Redstarts in this country during four months out of the twelve : May, June, August, September.

Down near the barn was an alder thicket surrounding a spring. While passing this spot I heard an entirely new bird-note. I found it to be made by a Sparrow of some sort, but continued observation failed to enlighten me as to the identity of the species. There were two of them. They would divide their time between the alder bushes, a young apple tree near by and a pile of fence rails near the barn. I must have spent several hours that day watching these birds, for after each of my many foraging expeditions to the different parts of the farm I would return and make another try at identifying this unknown Sparrow. I jotted in my note-book all the markings—I had never before made such elaborate field-notes on plumage—then I went down to the boat, where I had a couple of handbooks, and wasted an hour in trying to make my notes fit the book's description, but it was difficult work with extremely unsatisfactory results. The only thing that would at all fill the bill was the Savanna Sparrow. In fact, the book's description of the Savanna's habits fitted these birds admirably. I could not believe them to be Savannas, but the more I studied the book and the more I watched the birds the more Savanna-like they be-

came. I had now come to that point when Bird Lore's motto that "A bird in the bush is worth two in the hand" seemed decidedly untrue. One of those birds would be worth twice as much in my hand as were the two of them chirping in that alder bush!

On one of my returns to the house I was asked for about the twentieth time if I had identified the bird. When I stated that I had not, and that after the time I had spent in the endeavor, if I had a gun I would feel entirely justified in collecting one of the birds, to my surprise my host handed me a repeating shotgun and a couple of shells and told me to go and get one of them. Well, I must admit I did not need much coaxing, and a few minutes later there was a loud report down by the barn and I walked back to the house with the coveted specimen. The Sparrow proved to be an immature bird. The skin was given to Mr. Stone, who pronounced it a young Song Sparrow.

I am glad I collected the bird. All of my uneasiness over committing the murder has disappeared, for the gun had revealed to me a new chapter in the life history of the Song Sparrow. I have seen many young Song Sparrows, but apparently I had never before observed them at the age when, like the young man of twenty-one who starts out into the world, they had become of age and entirely broken the home ties.

Catoxen Cabin on the Rancocas

BY GEORGE SPENCER MORRIS

All things must have a beginning as well as an ending, and our camp on the Raneocas commenced in the writer's parlor one Sunday afternoon about ten years ago. We were sitting before the open wood-fire talking of old times. There were two of us, the one a sportsman much interested in birds, the other an ornithologist much interested in sport. We were reminiscencing, and our good wives would be the first to forgive their much blessed husbands for the little note of longing that crept into our conversation as we dwelt on days gone by when guns and canoes, frying-pans and fishing tackle claimed our attention rather than servants' wages and the sizes of babies' shoes. Presently the long-legged sportsman broached the thought that perhaps even staid married men like ourselves might keep a little in touch with old woods life if we went about it in the right way. The idea found a ready resting place in the mind of the short-legged ornithologist, and then and there was conceived the plan of erecting a small house, shack or shanty somewhere in "God's great out-of-doors." We had not the faintest idea of the best location for this air castle, but we were not unduly ambitious; we sought no sportsman's paradise. We just wanted a bit of woodland—pines preferred—well away from the city; a stream that would float a canoe and perhaps furnish a few fish; a country not thickly settled, where we could cut our own firewood without criticism and once more enjoy the sweet incense of frying bacon wafted upward through overhanging boughs; where in the autumn we might be able now and then to knock over a quail or a rabbit. In the spring we just wanted to watch the flowers grow and hear the birds sing; and then, too, a fellow could sometimes take his wife and children. This generous thought naturally arose to soothe the stirrings of the domestic conscience.

The next move was made in the dining-room of a well-known club, where the table was spread for three. The men of the



PHOTO. BY H. S. NEWELL.



PHOTO. BY W. STONE

CATOXEN CABIN.

fireside conference had taken unto themselves another, a smiling blonde-haired individual whose name is known to all students of American ornithology. Later they added two more to their number, one a cheerful fellow, who while he loves the bird in the bush, cares still more for the bush containing the bird, for it is among the botanists that we must look to find his name emblazoned; the other a man of learning, an instructor in one of America's greatest universities, a close student of birds, with a keen love for out-door life.

The diners separated after having come to certain definite conclusions. All were enthusiastically interested in the scheme. They at once planned a campaign of search for a possible location. They were agreed in thinking that the spot should not be more than twenty miles from Philadelphia, and that a return ticket should not cost more than one dollar.

Investigations to the north, south and west on the Pennsylvania side of the Delaware revealed no satisfactory location. At a later gathering some one boldly "took the bull by the horns," and said, "Well, I suppose there is nothing for it but Jersey." For the benefit of readers residing far from the benign influences of the Delaware valley, let me state that it is customary for Pennsylvanians in general, and Philadelphians in particular, to speak in a haughty, and even contumelious manner when referring to our sister State. There is nothing to justify it; it's just a time-honored custom, with no real malice back of it. Having thus asserted our superiority, we straightway betake ourselves for the months of summer to the shining sands and surf of Jersey's health-giving coasts, where for a long series of weeks the busy natives devote themselves to the pleasant task of separating us from our hard-earned cash.

But between the sea and the river lie sixty miles of sandy soil, well watered by streams that flow with a dark, strong current. There are the highly cultivated sections, which extend across the northern half of the State and down the eastern shore of the Delaware, and then there is the great central wilderness, stretching southward from the middle of the State and reaching at most points to the coast. It is a region of pine and oak and cedar, lonely and level, where the deer is still to be found and

small game abounds ; where you may wander far without meeting with signs of man, save perhaps the charred relics of deserted charcoal camps. You may take a likely-looking trail into this lonely region, sure that it must lead to some point of interest, but it rarely does. It just ramifies and fades away, and one is fortunate if there is enough of its thread left to make possible the retracing of his steps. Over this lonely land the broad, brooding wings of the Turkey Vulture are constantly spread ; its dark swamps are bright with *Cypripedium* and White Orchids ; in the spring its dry, sandy stretches are fragrant with trailing *arbutus* ; the little sundews lift their heads in the moist places ; millions of cranberries gleam in the brown bogs in autumn. In the winter it is a country of beautiful color ; rich russets and reds give contrast to the dark greens and purples of pine and cedar.

Here in the warm shelter of seed-bearing thickets thousands of birds find food and protection during the winter. The light, sandy soil does not hold the frost. The proximity to the sea has a distinctly moderating effect upon the temperature. You come upon birds and plants and even insects and reptiles which you had not expected to find so far north. In short it seems as though a bit of the Carolinas had been transported thither. In summer the marshes dry up to some extent and the land becomes gray, parched and dusty. Forest fires burn here and there, and by autumn the dry and sandy regions look withered and wasted.

A mild March day found three of the would-be campers wandering on the edge of this mysterious country. The old town of Medford was not far distant ; the deep, dark waters of the south branch of the Rancocas Creek flowed beside them. In the distance the purple pines formed a frieze along the skyline, hemming in the desolate regions beyond. We had come to the eastern edge of the farming country. A mile further and we would enter the Bear Swamp region, and then one might wander across some forty miles of almost uninhabited wilderness before reaching the coast. To us it seemed an enchanted land lying out there in the soft spring sunshine, and it called us with alluring voice. We determined to settle, if possible, within sight of its borders.

A thin strip of woodland fringed both banks of the Rancocas where we were wandering. The growth was about equally divided between pine and deciduous trees. Presently we came to a grove of taller pine crowning a little knoll which rose somewhat steeply from the bottoms bordering the stream. At the foot of the knoll bubbled a clear strong spring. A more ideal camp sight could hardly be imagined. But what would the owner of the land say to the coming of strangers upon his broad acres? As though in answer to an unspoken prayer there straightway appeared before us a tall son of the soil who looked us over with a keen but kindly glance. He was a man well on in years, full of a native dignity, and a sort of strong gentleness. We told him our story, and somewhat to our surprise he seemed to understand. The result was that then and there arrangements were made for the erection of our cabin beneath the whispering pines. I will not dwell upon our building struggles: suffice it to say that one of the members who posed as an architect draughted plans. There were heated arguments as to the most economical methods of cutting lumber, and it looked at one time as though blood might be shed in connection with the erection of the fireplace and flue.

But at length there came a lovely day in May, when for the first time we gathered under our newly-erected roof-tree, and taking our lives in our hands boldly plunged into the dangers of amateur cookery. Looking back over the past decade with an eye to our efforts along this line, one is impressed with the fact that man is a creature hard to kill. That first meal ended, we gathered about our broad fireplace and smoked the pipe of peace. Our labors were over, our dream had found fulfilment. Outside the moonlight sifted down through the pines and the wind whispered softly. We were far from the sounds of man. Only the occasional barking of the farmer's dog in the distance seemed to unite us with the outer world. There were the wild cries of the seemingly sleepless Killdeers over in the pasture, and every now and then an Ovenbird or a Catbird would break into song, stirred by the spirit of spring and the bright moonlight.

Since that day we have come to know the place in intimate

fashion at all seasons of the year. We have penetrated the lonely regions to the eastward almost to the coast. The waters between us and the Delaware have been navigated by canoe. We have tracked the small beasts of the woods in the snows of winter. We have watched the Shore Larks and Pipits sweeping over the bare fields like leaves in the gale. We have become intimate with the swamp-dwelling birds which grow fat in the winter on the seeds and berries of sheltered thickets. In the spring we have heard the first flute-like notes of the Bluebirds traveling northward across the sky, and have welcomed the gay throngs that follow until all our grooves and thickets are filled with fluttering wings and rollicking songs. We have watched the building of nests and the rearing of young as spring and summer progressed, and then when autumn has made all the woods and thickets to swim in a riot of color, we have seen the Wild Ducks come driving down the curves of the stream, and realized that soon the snowflakes would fly again.

Moreover, there has been a delightful human interest about this little cabin. Jolly family parties, when the flutter of skirts and the laughter of children enlivened the woods; wild, marauding bands of ornithologists and botanists who swarmed up trees and plunged into swamps in search of prey; dreamy-eyed artists with palate and canvas; tired business men who just wanted to lie on their backs and look up at the pines through half-shut eyes; and then there are the snug evenings spent before our glowing fireside when the winter wind whistles about the house and the good tale is told and the hot argument fought out. Yes, our venture has been a success, and has helped not only ourselves but others also, we trust.

All this has been written in the hope of stimulating a desire for such a life on the part of the readers of *CASSINIA*. We all know something of "the call of the wild," but whatever our inclinations may be there are few of us who can respond to it, save perhaps at very rare intervals. There is, however, a modified summons, which we might term "the call of the half wild," and to this we can more easily respond. Dame Nature is always loitering just round the corner. It pays to follow her beckoning; you can find no better company.



PHOTO. BY W. L. BAILY



PHOTO. BY J. S. WITMER, JR.

INTERIOR OF CABIN AND RANCOCAS CREEK.

Bird-Life at Catoxen

BY WITMER STONE

The bird-life immediately about our cabin is not materially different from that of any rich woodland in the lower Delaware Valley, but from the fact that when we are there we live right with the birds instead of visiting them casually in their woodland retreat, they always seem much more abundant and much tamer.

The Wood Thrush and Ovenbird are perhaps the most characteristic species, and the woods fairly ring with their music during May and June. To one who is sleeping in a bunk close under the eaves the song of the Wood Thrush, which perches on the corner of the roof just outside, is almost ear-splitting. I never realized before what a volume of sound the bird produced, and when joined with the crescendo of the Ovenbird, as he walks over our front porch, any serious thought of early morning sleep, even should we be so inclined, is out of the question. Of other birds which come close to the cabin, there is the Phoebe, which often nests under the porch roof, the Humming-bird and Acadian Flycatcher, which have built their dainty nests over the path leading down to our spring. The Crows one year built in one of the tall pines which shelter us, and last season the Cardinals built in a little thicket of black birches within twenty-five feet of the back door. Maryland Yellowthroats, Chats, Tanagers, Black and White Warblers, Catbirds, Carolina Wrens, Downy Woodpeckers, Tufted Tits, Crested Flycatchers and Red-eyed Vireos are common nesting species in the woods, while all along the stream the White-eyed Vireos and Yellow Warblers abound and an occasional Green Heron or Kingfisher may be seen. Blue Jays and Carolina Chickadees are present at all seasons, but are most charac-

teristic in winter, when their cries replace those of the Wood Thrush and Ovenbird and become the music of our woods. Occasionally we see a few Pine Warblers, but whether they breed here or are merely stragglers from the wilderness to the east has not been determined.

In the old fields lying between our woods and the station, and also just east of us, quite a different avifauna prevails. Meadow-larks abound, their calls are ever in the air, and in early spring we have sometimes seen the rival males fighting on the ground like game chickens, striking and clutching one another with their powerful claws. Killdeers, too, are always to be seen, and in muddy places we find the borings of Snipe early in the season. In similar places, too, are the Redwinged Blackbirds with their nests hidden in the thick clover, and once we found a Robin's nest in a similar position in the very center of a large field with no tree near. In the drier ground are Field Sparrows, Vespers, and a few Grasshopper Sparrows, while the borderland between the wood and the open harbors Thrashers, Song Sparrows, and Indigobirds.

About the old farmhouses other familiar species greet us when we tramp across country for supplies just before dark. House Wrens are still common birds in this neighborhood, and Flickers, Purple Grackles, Orchard Orioles, Kingbirds, Wood Pewees, Chipping Sparrows, Warbling Vireos, Robins, and Bluebirds are to be found about every orchard, while Barn and Cliff Swallows and Chimney Swifts circle about overhead, and far above is the ever-present Turkey Vulture.

When we take an all-day tramp over to the Bear Swamp, or farther into the wilderness, we find still another group of birds. Ovenbirds, Maryland Yellowthroats, and Field Sparrows still abound, but the Chewink becomes the characteristic species, with Pine and Prairie Warblers, and in damp places surrounding some old deserted forge or saw-mill we find an abundance of Whip-poor-wills, Tree Swallows, and Martins, together with some Parulas and Hooded Warblers.

On the cranberry bog in the Bear Swamp, and also at Chairville on the western edge of the pine barrens, we have found that interesting little bird, Henslow's Sparrow, which until re-

cent years seems to have been overlooked by our local ornithologists.

The above species, with an occasional Goldfinch, Cowbird, Cedarbird, Baltimore Oriole, Night Hawk, Yellowbilled Cuckoo, Screech Owl, and Sparrow Hawk, make up the normal list of summer birds for the region covered by our usual wanderings when lodged at Catoxen.

In migrations there are, of course, many other species. The various Warblers pass through our woods in their travels, and ducks—Wood Ducks, Mallards and Black Ducks—have been seen on the creek, and down by the spring early one May morning I heard a Veery singing. Late in August, too, we usually see solitary Migrant Shrikes perched on the fence posts about the old fields and flying away to the top of some small tree, with much show of white on the wings, as we approach.

In winter the Juncos come up to our door for crumbs, and Brown Creepers, Nuthatches of both kinds, Golden-crowned Kinglets, and occasional Myrtle Warblers are to be seen, while swamps and thickets shelter Tree and White-throated Sparrows and an occasional Hermit Thrush.

Goldfinches, Cardinals and Jays are more conspicuous at this season also, and several times we have watched the Pine Siskins feeding on the alder catkins. A little to the west, as the winter sun is setting, we can see the long lines of Crows patiently winging their way to the Merchantville roost.

One bitter cold windy day an enthusiastic ornithologist discovered a Snowy Owl perched in the dense top of one of the tall, slender, red cedars that line the old fence rows. After a vigorous bombardment, a well-directed missile brought the bird to a realization of its danger, and with tremendous wing action and loud complaining cackle there flew out of the sheltering cedar and away over the fields to a solitary farm-house a snow-white Guinea Fowl, demonstrating that color and size are not always sufficiently diagnostic to be relied upon.

Among the birds which do not occur at Catoxen, so far as we have been able to ascertain, are the Swamp Sparrow and Marsh Wren of the Delaware meadows which apparently do not here venture above tide-water, the Redheaded Woodpecker, always a

rare bird on the New Jersey side of the river, and the Worm-eating, Kentucky and Blue-winged Warblers* common species in the low woods of eastern Pennsylvania.

We have not collected birds at Catoxen ; in fact collecting, so far as we are concerned, is tabooed. Neither have we made especial effort to record rarities, our attention has rather been directed to a better acquaintance with the commoner every-day birds that surround us than to the casual transients that look in upon us for a moment without any intention of stopping and making their home at Catoxen Cabin.

* This species has been seen on the edge of Bear Swamp, May 30, 1906, and along the Rancocas to the north.

Three Finds in South Jersey

BY ROBERT THOMAS MOORE

Red-letter days are not so common to bird lovers as one might infer from devouring the purple accounts of camping and cruising ornithologists. With colony bird life the ordinary bird lover has little to do. The populous islands and overcrowding nests gleam and remain in the imagination, and are at best but witching potentialities never actualized. If he would contribute valuably to the store of bird knowledge he must sacrifice his gleaming visions on the altar of thorough study of the commonplace. Occasionally, however, very occasionally, his study trips are starred by finds; he secures a rare bird or chances upon nests unlisted before. And however much he has been schooled by professional ornithologists to belittle his feelings, he cannot help the heart-stopping thrill or altogether check the frenzied shout.

With the expectation of such a thrill I planned a trip to Southern New Jersey. The Pine Warbler and Blue-gray Gnatcatcher were immediate causes and attracting forces. The former, though reported resident, has never had its nest recorded from the State, and the latter both in person and home is exceedingly rare. How often the clear monotone of the one or the flitting blue form of the other had beckoned down the winter months. At last May 13, 1908, arrived, and we started, my brother and I, for Griscom Swamp. To reach it required fifty-three miles of automobiling, by no means objectionable on a balmy May morning. The rising sun had waked us and ushered in the hottest day of the month, but the humidity was not excessive, and an early start had sent us half our distance before the sun had mustered all his forces.

The trip was not all whirling monotony as long automobile rides are apt to become. In the morning dusk rabbits darted

in front of us or speeding directly ahead, risked instant death. Whip-poor-wills rose in lumbering flight almost too slow to escape the radiator, or crouching permitted us to pass over them. Near Elwood a racoon underestimated our speed and nearly lost his tail thereby. And at Estillville two quail thundered up from the road. But the most interesting incident occurred three miles from Egg Harbor. Two adjoining telephone poles were inhabited. From one we shocked into startled flight a Flicker and from the other a Bluebird. As the nest holes were at the same height, and resembled each other in general appearance, except that the Bluebird's was more weather-soiled, we assumed that the Flicker had excavated both, one in 1907 and the other in 1908, being compelled to hollow the second by the Bluebird's preëmption of the first. The last part of our trip twisted and turned over rollicking hills to a farm-house on the borders of Griscom Swamp.

Plans having been settled and a friend secured as guide, after an hour's delay, we were winding over a wretched road toward the center of Griscom. Part of the way was sand, much of it mud, and the rest corduroy. It was so dangerously narrow, and set us hitching and tossing so distractingly, we could hardly appreciate the stretches of pines, the gloom of cedar swamps, or the flashing sunlight of bayberry openings. The two miles were not covered at a speed to excite the greed even of a South Jersey justice. What with butting the sand and bumping the logs we made slow work of it, and vigorously prepared our digestive systems for lunch. Nor did that meal beckon alluringly ahead when every glance to the rear focussed a horde of mosquitoes augmenting in fierce pursuit. At last we jolted into the open space about Griscom Mill, and at once lunched in pestered ease.

We were now in the middle of Griscom Swamp. For nearly a mile we had labored across its western arm and had reached a small clearing perhaps an acre in extent, somewhat elevated and therefore dry. Before us to the east lay the main swamp. Across it one mile would bring us to the Great Egg Harbor Meadows. North or south we could travel either way two and a half miles without emerging. A wilder place is not to be

found in South Jersey, nor one in which the feeling of separateness from the ways of man can be so complete. Five miles long and from one to two miles wide, this great area is a borderland, half wet and half dry, between the maritime meadows and the pine barrens of the mainland. It has a uniform appearance, except where slightly different floras and faunas are produced by abundance or scarcity of water. Waist-high it rises in the depths of the swamp, while on the edges, or on the so-called islands, it supplies only enough to saturate the earth to a spongy condition. Innumerable streams twist and bisect each other, forming a network of waterways and flowing so sluggishly as to make it hardly correct to say they drain the swamp. In fact, water actually "backs-up" from the meadows during storms and unusual periods of high tide.

As we took the main swamp road eastward we passed for a half mile over a more or less dry portion. Here the characteristic and most abundant trees are pines, scrub-oaks and holly. These mass or cluster, and among them are scattered beeches, pin oaks, small birches, and maples. The most characteristic feature here, as well as throughout the whole swamp, is the impenetrable quality of its undergrowth. A prickly and close-set foundation of holly, sassafras, sweet gum, huckleberry, hardhack, and swamp maple is bound and knotted inextricably by briars and the vines of smilax. The slightest detour from the road means a plunge into thorns, and no one gets through without blood-letting. The strongest gunning trousers will not escape notice, and buckskin gloves are repeatedly pierced. However tempting the prize, no one enters without counting the chances. And of one, alone and lost without a compass, it may be truly said, "who enters here, leaves hope behind."

Keeping carefully to the road therefore, our guide led us on, hoping that along the opposite side of the swamp on the points that jut into the meadows we might find something rare. Our first thrill was as unexpected and surprising as one could wish, for we were proceeding rapidly, and what with clinking climbers and irrepressible voices making more noise than we should. A sluggish wind served but to intensify the heat and permitted the mosquitoes to plan their attack with care. Each of the

grassy swales that at intervals widened our path increased the gray-legged host. Their terrors were unmitigated by the pine fragrance which hung heavily about us and rendered our infested course tantalizing. Insect liquids were of no avail, for they were instantly floated off by perspiration. I tried to listen to new notes, and especially for the Pine Warbler's monotone, which I had often suspected among bird medleys, but never identified. Birds were singing in confusing numbers. Sparrows chirped, Woodpeckers shrilled alarm or interest, the Prairie Warbler ran his chromatic scale, and the Wood Thrush rang the minor on his flute, but no new voices. A short distance from the meadows we took a branch road to the north and plunged into the wetter portion of the swamp. Off from the road were innumerable pools from two to three feet deep, and in places the road itself dipped under a foot of water. The pines thinned out to straggling sentinels, and their places were taken by gums.

Passing the last clump of pines some intuition common to bird seekers swung my glance directly back over the road we had come. From the umbrage of a pine tree peered a small bird of yellowish tint, watching quietly; there was something so tense about her posture that my suspicion was awaked. Nothing but the proximity of a nesting site could cramp a bird into such an attitude. A moment of bird fear was on it. I leveled my powerful Goertz glasses. Sure enough! In the bill was a bit of fluffy material, and, joy of joys, it was a Pine Warbler! The little experience I had had with this species enabled me to identify it as the female. I hissed to my companions for silence. However intense the bird's fear, her statue mood soon passed. With sluggish flight she flew to the top of a pine not twenty feet from where I stood, and actually overhanging the road along which we had come. So thick were the pine spills, she entirely disappeared, and before I could aim my glasses had slipped out again and skulked into the swamp. I examined the tree's top. Nothing but bunches of long spills and pine cones! That barrenness spoke of failure, and recalled Mr. Stone's words regarding trips in search of this species: "We saw plenty of birds, and strained our necks in vain for the

nests." Again I raised my glasses, and cramped myself in neck-tiring positions, but to no purpose. There were only ten small limbs on that tree, and every spill and cone magnified distinctly through my lenses. Disappointed I decided to wait. Not three minutes passed before the bird appeared again with more material, and waiting a second of caution, fluttered to the same side of the same pine's top. Again she was too quick for me to catch her at work, but not quick enough to conceal the spot. Apparently it was a big pine cone saddled on one of the highest limbs. Was it a cone? The long pine spills almost hid it. I determined to hold my glasses continually on that spot till the bird arrived again or my neck broke. One minute, two, five minutes passed. I was beginning to regret my determination, when a sharp warning from Joe made me alert. The bird had come into the field of my glass and was weaving cotton around that pine cone. No words could describe the surge of delight within me as I realized that a Pine Warbler's nest had at last been found in New Jersey,* and I was the lucky discoverer. Triumphant I turned to my companions and announced the discovery. I was in the throes of the first thrill, and they kindly bore with me in patience while I dilated on the value of the find. It required consummate forbearance not to climb that tree and make assurance positive. But I took the way of caution and decided to return a week later.

With backward glances we proceeded deeper into the swamp. Of the large trees, none but gums, beeches and hollies remained. While the varieties of trees decreased, birds became more numerous. But we had little time to investigate, as we wished to push on to the meadows. I discovered in passing a Hooded Warbler's nest half finished, and caught sight of what I would positively state to be a Gnatcatcher had I ever had the precedent of seeing one before. Many gums were of tremendous size, gaping here and there with promising Owl

* While I know of no published records of the finding of Pine Warblers' nests in New Jersey, I have just been informed by Mr. J. P. Callender that one was discovered with eggs near Chatsworth in the Pine Barrens May 28, 1904, by Mr. H. H. Hann, and another with young at the same place June 1, 1904.
—ED.

holes. A quarter of a mile beyond the Pine Warbler's nest we decided to risk a plunge into the swamp and cut due east for the meadows. Wading through water, bisecting bunches of brush and diving into briar nets, gave us serious thought for half an hour. At length we caught sight of the dead stumps and twisted trees that mark the fighting line between the swamp and the meadow storms. This was a favorite home of woodpeckers; every stump was drilled, and habitations were neighborly enough to be described in terms of colony life. Stepping out from the swamp, the meadows seemed dry in comparison. Here the light south wind had full sweep, and kindly parted us from our winged pests. East, north and south stretched the salt marshes apparently without life and almost unbounded. Only at ten miles distance was the eastern horizon ridged by blue, marking the line of coast islands, else would the meadows have dwindled away in heat vapors and atmospheric scintillations. Before us lay the scene of one of nature's everlasting battles, always in subtle progress. Directly north and south like a shattered saw edge stretched the margin of the swamp. Its line swung irregularly, here jutting out triangular points, there projecting rounded knobs. Dead stumps singly in the meadow denoted victory for salt and wind, while clumps of trees on meadow islands spoke of sturdy fighters still in the battle.

Towards one of these points my brother and I started, while Joe, our guide, kept to the swamp. A quarter of a mile over spongy and muddy creeks brought us to our goal. As we approached the point Fish Crows took wing and beat or sailed above in cawing protest. Their attachment to the place did not seem strong, as they soon disappeared, flapping heavily over a miniature marsh to the swamp. This marsh formed the base and the pine end, the point of an irregular triangle that protruded encroachment onto the meadows. Entirely enclosed by trees, it is about one hundred feet long by three hundred feet wide, counting the width as distance across the base of the triangle. Over the entire space four feet in height waved a growth of wild rice. It grew in bunches on little mud islands, the water between being from one to three feet deep. The point

of the triangle out beyond the marsh was, except for several sloughs, comparatively dry. Covering it sparsely were dead and dying trees in shapes of sturdy defiance or cringing impotence. Twisted and contorted by ravaging storms, they stand gray sentinels at the post of duty. In life gaunt fighters; in death they were petrified symbols of endurance past human. The dead were half the trees on the point, the living were mostly pines and oaks. Only one other large tree had chosen this dangerous outpost, the swamp maple, and only a few of these. The undergrowth was not nearly so thick as in the swamp. Briars were almost absent and huckleberry bushes were numerous. The thickets were completed by birches and gums. Bracken and pine spills covered the floor. Flung in all directions were fallen trees and dead logs.

Over these and through the undergrowth we pushed, flushing birds at every step. These were Sharp-tailed Sparrows, Yellowthroats, Hairy and Downy Woodpeckers, and Carolina Chickadees. Other species were not revealed by a hasty search, and one glance upwards discovered but a few Crows' nests bunching the tops of the pines. I gave up the end of the point and headed for the rice marsh. Gracefully it waved in shimmering greens to the unsteady breeze. Halting at the edge, I calculated the difference between the depth of the water and the height of my boots. As I stood there in dubious indecision, I was suddenly thrown into the second thrill of the afternoon. A large bird sprang from the marsh not fifty feet in front of me. An erupting geyser could not have made my heart hammer faster, for those poorly hidden islands of mud were the last places I would have thought could have concealed so large a bird. Save for one shrill cry it rose silently, and gaining power with each wing stroke swiftly made for the meadows. To disappear from view in soaring flight was a matter of seconds. From where I stood I could plainly see the bird's nest which occupied completely one clump of mud, and was but slightly screened by grass. Even at a distance of fifty feet the glint of blue eggs caught my eye, and their beckoning glamor broke my spell-bound posture.

I confess my movements were curiously like those of a bird dog on stand, changed by the hunter's shot into a frenzy of

unthinking action. Fortunately the water was not deep at this point, or I would have suffered for my thrill. Vigorous jumping and splashing brought me to the nest.

A mud island four feet square, covered with stalks of wild rice, had been appropriated by the birds. The center of the clump was occupied by the nest. The foundation of this, two and a half feet in diameter and six inches high, was composed of pine and oak twigs intermixed with bunches of pine spills and bracken. On top was a slight hollow eight inches in diameter, rounded roughly by half a dozen bunches of meadow hay and a few rushes. It was a bulky, roughly-made platform, yet possessed all requirements needed for a ground nest, security of position, height above high water, and ability to hold its clutch. Five beautiful eggs, light-blue as the softest sky, nestled in the hollow, and despite their size crowned the bulky mass with light and delicate beauty. They were uniform in color, without spots or blotches, except that two had faint light-brown streaks or smudges.

These objects in blue, for whose possession a skulking war between their owners and the meadow pirates was evidently in progress, were the center and soul of an island home. From the standpoint of bird art nothing more could have been desired. Completely surrounded by swaying grasses it reigned supreme as castle of a grassy lake. Water was not wanted for moat nor trees for demesne. The owner was king of the place and held all under fear. It was really as well chosen a bird retreat as I have seen. On the edge of the great meadows, yet well concealed by the screen of trees, it was a vantage point from which the Hawk could dart out over the marshes in search of food or perform aerial evolutions for the admiration of his mate.

And it was a Hawk. None but the Marsh Hawk could have owned such a nest or possessed such an appearance. Astonished as I was when it rose, I had noticed its owl-like ruff and fluffy feathers, and especially the white upper tail-coverts. To my startled eyes the bird had the appearance of a wedge, very wide in front and narrowing toward the tail. But I wanted more positive identification, because a book I had with me, "The Birds of E. Penna. and New Jersey," gave the last re-

corded nest from New Jersey as found in 1877. Two hours in ambush, part of which time I spent in search for Joe, who had been frenzied by the sight of a deer, failed to secure the bird. Both were seen for most of this time soaring over the meadows at high altitude, but only once did one come within gunshot. That descent was described by my brother as a most peculiar performance. Just preceeding it the bird, probably the female by its size, had been but a speck miles off in a cloud-flecked sky. Suddenly it changed its soaring motion and mounted spirally aloft. When almost out of sight, it poised for some seconds. Noticing that it was gradually growing larger, my brother became aware that the bird was coming directly for her nest. With such inconceivable rapidity were those miles of distance covered that almost before he could get ready to aim, the bird had reached the point, and was sweeping down a stump-bordered opening "like a feathered cannon-ball." Without pause or slacking it came straight on, and so confused him that he forgot to wait, and fired two shots at it when only twenty feet away. Of course it was a miss, and no amount of waiting thereafter secured another chance. Several times one of the birds did begin the same evolution, but lost courage at the point and sheered obliquely back. We decided to take the eggs for fear the Fish Crows hovering about might pounce upon them before the Hawks recovered from their timidity.

Nine days later, May 22d, with an entirely different party, I made another trip to Griscom Swamp. The day began with clouds and ended with heavy rain. Though not a hot day the humidity was terrific. We reached the Pine Point without other incident than going a mile beyond it. We entered at the same spot we had nine days before. Having reached the edge of the miniature marsh just where the Marsh Hawk had first startled me, I was in the act of pointing out the nest to my companions when a fluttering noise back of me whirled me about instanter. A Black Duck had jumped almost at my feet and was whirring at high velocity down the same line of dead stumps pursued by the Marsh Hawk. I was instantly alert to possibilities. Black Ducks were common enough, but not at this season, and a nest would be a rare find. Not for years had

its eggs been secured from New Jersey, and though reported as breeding from one or two localities, no definite egg-record had been made. It was therefore with eagerness yet care we began a search. Two minutes' time sufficed to make the discovery. There it nestled at the foot of a small maple so perfectly concealed that one could stand directly above it and glancing down could not detect one of the nine eggs. It was about sixty feet from the Marsh Hawk's nest, and not five from the stand I had taken when startled by the Hawk's first appearance. I remembered the tree and its lichens distinctly, and seemed to recall having leaned against it. I must on several occasions have passed within a foot of it. Where the Duck had been on the thirteenth when we had spent three hours in this locality was a problem. We must surely have noticed the bird it would seem flying about, at least at a distance.

I have read descriptions of the eggs calling them "dirty drab," which led me to expect a nestful of unattractiveness. Not such was the case with this particular clutch. Beauty they possessed at least when observed in their natural surroundings. The body of the nest filled the space between the roots of a large maple. Dark green lichens spotted the tree forming a beautiful background, while light green was the color of the huckleberry bushes branching above and grouping on the left. The front and right were screened by a bunch of soft brown grasses, which converged above with the huckleberry bushes and made it impossible to thrust in a hand without breaking the grasses. The nest proper concaved about a depression eight inches in diameter. It was filled with pine spills, bracken, and leaves of oak and maple, no down having yet been inserted. The eggs were packed closely, the leaves sticking up between them. In color they were cream buff, some of them having a slight greenish tinge. The whole interior of the nest was soft brown, leaves, spills, and eggs lending various shades, but all moulding into each other. These browns harmonized with the greens above, and made a most attractive home. Four days later the nest contained twelve eggs, so full as to have the appearance of convexity. Three eggs had been laid in four days. Down was now present, having been inserted in little bunches over the inside of the nest, adding a touch of warmth.

After leaving the Pine Point we went straight to the Pine Warbler's tree. With my glass I surveyed the supposed nest for several minutes. No sign of a bird was visible, but a knock on the tree brought the bird down, tumbling almost into my arms. Even for a bird mother it was a most peculiar artifice. Like a dropping plummet she fell straight to the earth, fluttering to a log a few yards distance from my feet. This log straddled a pool of water. On it she crouched, acting the broken wing in motion, a pathetic picture of trembling love boldly acting deception. At last, seeming to realize she could not draw me away, she walked lamely into the swamp, playing the game to the very last. Later she appeared on a neighboring pine, an actor no longer but a silent spectator of my movements. It is remarkable that during several hours spent about this nest I only once saw the male, and never heard a note from either bird.

Not till I had climbed the tree was I sure of the position of the nest. It was placed within a foot of the top about thirty feet from the ground, fourteen inches from the trunk, and saddled on a short branch. The tree was a pitch pine (*Pinus rigida*), seven inches in diameter at the base. For fifteen feet there was not a limb, and then only small ones, ten in all, giving the tree at its widest point a width of eight feet. Despite the absence of limbs there was an obvious reason why the nest was so difficult to detect. The cones on the tree were bunched near the top, and the nest was placed directly in their midst, not dissimilar from them in breadth at the bottom. A thick network of pine spills, five to six inches long, screened it below and above, forming a mass of umbrage impossible to pierce. This considered with the secretive movements and surprising artifices of the bird make it clear why the nest is so seldom discovered.

The materials of the nest might be described in the words of Mr. R. B. M'Laughlin in an article entitled "Nesting of the Pine Creeping Warbler": "The outer portion consists of long, thin strips of bark from grapevine, bits of dead weeds, and the stems of dry oak leaves, intermixed with a very fine silken web or cocoon which the bird gathers from openings in the pine bark;

web of the caterpillar is also used. It lines freely with feathers, using a respectable quantity of horsehair and dead tops of sedge also. The bottom consists mostly of feathers, and on the whole is quite warm and neatly built." My nest differs from this and from all other descriptions I have read in that there is not a feather used within or without. Instead, silky fuzz of the nature of thistledown has been employed, giving the interior the appearance of a Goldfinch's nest. It is securely perched on a cross formed by two small branchlets, which jut out at right angles to the main branch, and is held upright by pine spills woven into the sides. Three inches of depth inside provide further security for the contents when rocked by the strong shore winds. The eggs, four in number, are exquisitely marked with spots of brown and blotches of lilac and mauve. Though smaller and not quite so heavily spotted, they closely resemble a set of Vesper Sparrow's eggs I possess.

Mr. Ora Willis Knight, in the "Birds of Maine," states that the nests he has seen were "placed invariably in smallish pines at the edge of the taller pines and deep woods in an old clearing or opening on a side hill." This nest too was placed in an opening where a few pines divide the grasses from the swamp. The tree containing the nest stands alone, prominently apart from other large trees. A few feet south of it the grasses and goldenrods stop and impenetrable thickets begin. Such places have a charm of contrast, and one prefers to think that birds who "invariably" choose them possess some esthetic feeling. As I held the wheel that night whirling through fifty-three miles of darkness the day's incidents passed before me. Kaleidoscopic visions hurtled each other through my brain, of interminable swamps and pulling thickets, and especially of one tree on the border of swamp and grassland slanting obliquely upward into the sun.

A List of the Birds Observed on the Barnegat Region of the New Jersey Coast in August, 1908

BY WILLIAM C. BRAISLIN, M. D.

The rather meagre list of birds herewith presented contains a few species which seem to the writer to be of special interest. The short time which we were able to give to the trip is largely responsible for its brevity, as it could doubtless have been indefinitely extended had time allowed. The species listed occurred on or between August 22 and 25, 1908, unless otherwise stated, during which time the writer was the guest of Mr. Benj. T. Van Nostrand at Forked River, New Jersey.

Supplementary notes from his and Mr. John N. Drake's observations are likewise included; these instances being accompanied by their proper dates or definite data under the head of each species thus included. That part of the great autumnal migratory movement noted was so small that had it not been for the additions furnished by my friend referred to, the list would scarcely be worth recording.

Larus argentatus, Herring Gull. About a dozen birds of this species were noted during the days stated, most of them adult birds, nearly always singly.

Sterna hirundo, Common Tern. The abundance of these birds was very noticeable throughout our stay. Terns seemed to be visible at almost all times. The great number observed was in pleasant contrast with their scarcity at the same place and about the same date two years previously.

Hydrochelidon nigra surinamensis, Black Tern. Common. At this season the dark coloring serves to distinguish the species if the observer is fairly near at hand. The difference in size is not so appreciable when in flight as one might suppose. A wing-tipped bird of this species was picked up on the beach at Beach

Haven. It has retained some of the dark unmoulted feathers of the nuptial plumage on the head, especially above the base of the bill. About a hundred birds in straggling flocks were noted at this station within the hours between two and three on the afternoon of Aug. 23d, but not so abundantly at any other time. So far as we saw, none of the numerous Snipe shooters on the beach disturbed the Terns, and had not the wounded bird been found I should have believed them to have passed unmolested.

Puffinus borealis? Cory's Shearwater. Shearwaters, all supposed to be of this species, were observed off the beach over the ocean opposite Forked River in considerable numbers on Aug. 22d. They were migrating southward, mostly in small flocks, maintaining a rather low, steady flight by even, deliberate wing strokes. Their dark upper and white under parts, manner of flight, and a previous "scraping" acquaintance with the species, led me to a rather positive diagnosis, yet as we had no opportunity to take any, it is considered but proper to question the species. An easterly wind then blowing perhaps led them nearer than usual to the beach.

Florida cerulea, Little Blue Heron. Several White Herons were observed on Mr. Van Nostrand's salt meadows on various occasions during our stay, and all were believed to be of this species, though none were taken between the dates mentioned. Ten days before my arrival one from what he supposed the same flock had been secured by Mr. Van Nostrand at the same spot and sent to me. The individuals of this flock were extremely shy, and seemed to preserve their numbers successfully, though much hunted, as they were still reported as present well into the month of September. All the birds seen were in the white phase of immature plumage, no adult being observed.

Butorides virescens, Green Heron. Fairly common on the salt meadows.

Nycticorax nycticorax naevius, Black-crowned Night Heron. Not quite so common as the preceding.

Ardea herodias, Great Blue Heron. Ten to twenty seen in the four days. A bird of the year was secured by one of the party. These birds were reported as much more abundant here two weeks later.

Rallus elegans, King Rail. Several days subsequent to my departure Mr. Van Nostrand secured a fine example of the King Rail. It was on rather higher ground, nearer the upland, than a Clapper Rail taken on the same day, but nevertheless in the wet meadow. A number of little ditches, a foot or more deep, and bordered with the salt grass, seemed attractive to both species. The spot where the King Rail was taken was only a few yards from where the following was found.

Rallus crepitans, Clapper Rail, Common.

Macrorhamphus griseus, Dowitcher. These birds were not observed during my stay, but the following week, which was stormy, brought numbers of Snipe not noted before. Among them was this species :

Tringa maculata, Pectoral Sandpiper. The same remarks apply to this species.

Ereunetes pusillus, Semipalmated Sandpiper. Fairly common during the entire period of our stay.

Ereunetes occidentalis, Western Sandpiper. Four very typical examples of the Western Semipalmated Sandpiper were taken on Aug. 22d.

Calidris arenaria, Sanderling. The most abundant of the family observed. In the aggregate at least three hundred were seen feeding or in flight along the inner and outer beaches Aug. 22d to 25th.

Totanus melanoleucus, Greater Yellowlegs. Common one week after my departure. None seen during my stay.

Totanus flavipes, Yellowlegs. One flock of about twenty birds seen Aug. 22, one of which was secured.

Actitis macularia, Spotted Sandpiper. Common.

Numenius hudsonicus, Hudsonian Curlew. During stormy weather, Aug. 28, Mr. Drake secured one of two birds of this species which appeared in the salt meadows.

Squatarola squatarola, Black-bellied Plover. Not observed until Aug. 29, when five were seen.

Aegialitis semipalmata, Semipalmated Plover. A few seen each day.

Arenaria interpres, Turnstone. Three noted at beach opposite Forked River, Aug. 22; on Aug. 24 at Beach Haven thirty-two were seen.

The following list comprises such birds as were seen in the house-grounds and on the way to and from the dock and a few elsewhere:

Colinus virginianus, Bobwhite. Common.

Cathartes aura, Turkey Vulture. Four seen Aug. 21.

Circus hudsonius, Marsh Hawk. Two on Aug. 22.

Megascops asio, Screech Owl. Heard in evenings.

Coccyzus americanus, Yellow-billed Cuckoo. One seen Aug. 22.

Dryobates villosus, Hairy Woodpecker. Two or more Aug. 23.

Colaptes auratus luteus, Flicker. Common.

Antrostomus vociferus, Whip-poor-will. Heard at dusk.

Chordeiles virginianus, Nighthawk. Three seen before sunset, Aug. 23.

Chætura pelagica, Chimney Swift. Common.

Trochilus colubris, Hummingbird. Observed on two occasions.

Tyrannus tyrannus, Kingbird. Abundant.

Sayornis phæbe, Phæbe. Common.

Contopus virens, Wood Pewee. Several observed.

Corvus brachyrhynchos, American Crow. Common.

Corvus ossifragus, Fish Crow. Fairly common. Identified by call note.

Spizella socialis, Chipping Sparrow. This and the following observed repeatedly:

Melospiza c. melodia, Song Sparrow.

Pipilo erythrophthalmus, Chewink.

Progne subis, Purple Martin.

Hirundo erythrogastra, Barn Swallow.

Iridoprocne bicolor, Tree Swallow. Also on the beach.

Vireo olivaceus, Red-eyed Vireo.

Geothlypis trichas, Maryland Yellowthroat.

Thryothorus ludovicianus, Carolina Wren.

Toxostoma rufum, Brown Thrasher. Also seen on the beach.

Merula migratoria, Robin. Also on beach.

Sialia sialis, Bluebird.

Report on the Spring Migration of 1908

COMPILED BY WITMER STONE

The remarks of last year's report as to the value of the Club's migration record apply equally well to the coming season. It is of the utmost importance that we should not lose the services of any of the members of our Corps, and it is especially desirable that the number of observers within ten miles of Philadelphia be doubled. Those who are now on our list will confer a great favor by sending the names of others who are willing to keep records, and by making personal appeals to them to do so. Applications for blanks, etc., should be addressed to Mr. Alfred C. Redfield, Wayne, Penna., who will superintend this branch of the Club's work for the coming season.

Schedules covering the spring migration of 1908 were received from the following fifty-six stations:

New Jersey.

Cape May, H. Walker Hand.
Vineland, Miss Alice K. Prince.
Downtown (near Newfield), W. W. Fair.
Yardville, Rachel E. Allinson.
Trenton, C. C. and R. M. Abbott.
Princeton, Chas. H. Rogers.
Bordentown, Minnie V. Flynn.
Beverly, J. Fletcher Street.
Burlington, Helen F. Carter.
Rancocas, Emily Haines.
Moorestown, Anna A. Mickle.
Haddonfield, Mrs. E. Tomlinson Gill, Mrs. F. Morse Archer
and Mrs. Wm. J. Hamlin.
Pensauken, C. J. Hunt.

Pennsylvania.

Kennett Square, Charles J. Pennock.
Mendenhall, Wm. Carter.
Concordville, Mrs. K. R. Styer and J. P. Willits.
Swarthmore, David E. Harrower.
Swarthmore, George S. Roberts.
Lansdowne, John D. Carter.
Lansdowne, Louisa M. Jacob.
Lansdowne, Marion A. Honsaker.
Lansdowne, Anna D. White.
Lansdowne, Friends' School.
Lansdowne, A. J. Pennock.
Collingdale, Paul L. Lorrilliere.
Media, Lydia G. Allen.
Media, Edith L. Palmer.
Ardmore, Wm. L. Baily.
Haverford, Reynold A. Spaeth.
Haverford, L. C. Petry and W. E. Lewis.
Wayne, Alfred C. Redfield.
Wayne, L. S. Pearson.
Wayne, Edwin B. Bartram.
Bryn Mawr, Emily H. Thomas.
Collegeville, Henry Fox.
West Philadelphia, Thos. R. Hill.
West Philadelphia, Mrs. Thos. R. Hill.
Wissahickon, John R. Pickering, Jr.
Germantown, Frank Miles Day.
Germantown, Miriam F. Solis Cohen.
Germantown, Hilda Justice.
Germantown, Arthur F. Hagar.
Olney, George S. Morris.
Oak Lane, John W. Allen.
Frankford, Richard F. Miller.
Fox Chase, Alexander Patman.
Bristol, Thomas D. Keim.
Glenside, Richard C. Harlow.
Woodbourn, Edward Pickering, Jr.
George School, Students.

George School, Wm. E. Roberts.

George School, Jesse Packer.

Easton, Edw. J. F. Marx.

Columbia, Wm. F. Rochow.

Marietta, W. H. Buller.

Lopez, Otto Behr.

The spring migration of 1908 at Philadelphia was more irregular than usual apparently owing to the more frequent rises and falls in the temperature and the consequent breaking-up of large waves into a number of smaller ones. The greatest movements were on March 27, April 25-26, May 2-3; 8-9 and 13; that of April 25-26 being the largest. On the whole the dates of arrival were early. Of sixty-four species concerning which we have the fullest record the first arrival within ten miles of Philadelphia was earlier than the average of the past six years in 40 species, equal to the average in 7 and later in 17. Taking bulk arrivals 39 species were earlier than the average, 5 equal and 20 later. Owing to the well-known irregularity of early stragglers however, the first arrival in some species may be early while the bulk movement is late and vice versa. In fact in the above statement which seems to agree so closely there are 26 species in which one date is early and the other late.

Taking the birds whose bulk movement usually occurs in February or March we find that all were from two to nine days earlier than the average except the Fox Sparrow (2 days late) and the Flicker, Meadow Lark and Field Sparrow, which being partially resident, are not very satisfactory for migration studies. The Phoebe was seven days earlier than the average and one day earlier than ever before. Among the April migrants the bulk movements were early or normal in all but two species, the Bank Swallow and Chimney Swift, which were respectively two and three days later than the average.

The wave of April 23 and 26 occasioned remarkably early movements on the part of many species; the Brown Thrasher, House Wren, Grasshopper Sparrow, Maryland Yellowthroat, Solitary Vireo, Yellow Warbler, Ovenbird, Catbird and Wood Thrush came in bulk three to four days earlier than the average and from one to two days earlier than ever before recorded.

The early May migrants were usually a day or two earlier than the average; the White-eyed and Red-eyed Vireos, Baltimore Oriole and the Black-throated Blue Warbler making the earliest bulk movements recorded for these species.

Most of the later May migrants were late, owing, to the cooler rainy weather that prevailed from May 4 to 8. The Chat, Rose-breasted Grosbeak, Indigo Bird, Olive-backed Thrush, Yellow-billed Cuckoo, Hummingbird, Wood Pewee, Black-poll, Kentucky, Magnolia and Canada Warblers were all later than the average by from one to four days.

The dates of bulk arrival for the 64 species discussed above will be found in the last column of the Philadelphia schedule pp. 49-52. The date is that upon which the species had arrived at one-half of the stations at which it was recorded, disregarding entirely the last quarter of the records, which represent in the majority cases late or erroneous dates.

For example the House Wren was recorded as arriving as follows; at one station on April 16th, three on the 19th, two on the 20th, one on the 21st, four on the 23rd, five on the 24th, five on the 25th, five on the 26th, two on the 27th and one on May 1st, at twenty-nine stations in all. Discarding the last quarter of these records as probably later than the bird actually arrived we have twenty-two left, and the bird had reached eleven of these (one-half) by April 23 which we take as the date of bulk arrival.

NAME.	Moorestown, N. J.	N. 1; E. 12.	Haddonfield, N. J.	Pensauken, N. J.	Media, Pa.	S. 2; W. 12.	Swarthmore, Pa.	S. 3; W. 10.	Collingdale, Pa.	S. 3; W. 6.	Lansdowne, Pa.	S. 1; W. 6.	Ardmore and Haverford, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	Germanstown, Phila.	N. 6; W. 1.	Oak Lane, Phila.	N. 7; E. 2.	Fox Chase, Phila.	Frankford, Phila.	N. 5; E. 5.	Olney, Phila.	N. 6; E. 3.	Bulk Arrival at Phila., 1908.
Canada Goose																									
Green Heron	May 13			May 8			Apr. 11	May 3			Mar. 22	Mar. 11									Mar. 7	Mar. 26	Mar. 9		
Night Heron				Apr. 26			Apr. 11	May 6			Apr. 14										Apr. 6	May 10			
Spotted Sandpiper	May 3		May 3	Apr. 26			Apr. 11	Apr. 23			May 11	May 10									May 8	Apr. 21	Apr. 21		Apr. 24
Solitary Sandpiper	May 3			Apr. 26			Apr. 26				May 3										May 5	Apr. 10			
Killdeer	Mar. 3		Mar. 2	Mar. 15			Mar. 7	May 3			Mar. 2										Feb. 15	Mar. 24	Mar. 7		
Dove	Apr. 27		Apr. 1	Mar. 14			Mar. 19	May 3				Mar. 27									Mar. 20	Mar. 7			
Osprey	Apr. 14		Apr. 9				Apr. 11														Apr. 17	Mar. 15			
Turkey Vulture	Mar. 8		Res.	Mar. 15			Res.	Apr. 5				Mar. 11									Mar. 14				
Yellow-billed Cuckoo	May 13			May 20			May 13	May 23			May 14	May 20									May 8	May 10			May 13
Black-billed Cuckoo							May 19														May 14				
Kingfisher	Apr. 13		Apr. 24	Mar. 7			Mar. 22	Apr. 5			Mar. 27										Mar. 29	Mar. 14			
Yellow-bellied Sapsucker			Apr. 2																		Mar. 29	Mar. 14			
Red-headed Woodpecker	May 3			Apr. 26																	Mar. 10	Mar. 13			
Flicker	Mar. 15		Mar. 23	Mar. 7			Jan. 8	Mar. 12			Mar. 15	Mar. 22									May 9	Apr. 27	Apr. 25		
Whip-poor-will			Apr. 29	Apr. 27							Apr. 29										Mar. 14	Mar. 7			Mar. 15
Nighthawk			May 8	May 20			May 4	May 25				Apr. 25									June 3				
Chimney Swift	Apr. 21		May 1	Apr. 25			Apr. 24	Apr. 26			Apr. 25	Apr. 26									Apr. 18	Apr. 24	Apr. 26		Apr. 25
Hummingbird	Apr. 26		Apr. 24	May 16			May 4	May 16			June 8										May 3	June 5			May 13
Kingbird	May 3		May 3	May 16			May 2	May 3				May 5										Apr. 28	May 8	May 2	
Great-crested Flycatcher	May 12		Apr. 26	May 2			Apr. 29	Apr. 28			May 4	Apr. 28									May 2	Apr. 28	May 10	Apr. 29	
Phoebe	Apr. 14		Mar. 30	Apr. 12			Mar. 14	Mar. 14			Mar. 11	Mar. 25									Mar. 14	Mar. 20	Mar. 27	Mar. 14	

The relative positions of the stations are indicated by the number of miles, N. or S. and E. or W., that each one is distant from Philadelphia, Pa., i. e., its latitude and longitude with reference to the City Hall.

NAME.	Moorestown, N. J.	Haddonfield, N. J.	Pensauken, N. J.	Media, Pa.	Swarthmore, Pa.	Collingdale, Pa.	Lansdowne, Pa.	Ardmore and Haverford, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	Germanatown, Phila.	Oak Lane, Phila.	Fox Chase, Phila.	Frankford, Phila.	Olney, Phila.	Bulk Arrival at Phila., 1908.
Wood Pewee	May 15	May 13	May 16	May 13	May 13	May 23	May 13	May 13	May 11	May 9	May 12	May 19	. . .	. . .	May 5	May 13
Green-crested Flycatcher.	. . . . .	. . . . .	. . . . .	. . . . .	May 15	May 30	May 30	May 30	. . . . .	May 16	. . . . .	. . . . .	. . . . .	. . . . .	May 18	. . . . .
Least Flycatcher . . . . .	. . . . .	. . . . .	. . . . .	May 10	May 9	. . . . .	May 12	May 12	. . . . .	Apr. 29	. . . . .	. . . . .	. . . . .	Apr. 21	Apr. 21	. . . . .
Bobolink	May 8	May 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	May 9	May 8	May 8	. . . . .
Cowbird	Mar. 3	Mar. 5	Mar. 6	Mar. 14	Mar. 14	. . . . .	Mar. 22	Mar. 12	. . . . .	Mar. 7	Apr. 2	May 5	May 9	Mar. 21	Apr. 17	May 8
Red-winged Blackbird . .	Mar. 3	Mar. 5	Mar. 7	Mar. 15	Mar. 3	Mar. 11	Mar. 14	Mar. 3	. . . . .	Mar. 3	Mar. 4	Mar. 4	Mar. 28	Mar. 10	Apr. 17	Mar. 16
Meadow Lark	Res.	Res.	Mar. 11	Mar. 12	Feb. 5	Mar. 13	Mar. 15	Mar. 3	. . . . .	Mar. 3	Mar. 4	Mar. 4	Mar. 28	Mar. 10	Mar. 2	Mar. 4
Orchard Oriole	Apr. 28	May 3	May 16	Apr. 28	May 8	May 8	May 15	Mar. 13	May 17	May 13	. . . . .	May 7	Mar. 21	Res.	Res.	Mar. 10
Baltimore Oriole	Apr. 28	Apr. 26	May 16	Apr. 25	May 7	May 8	May 11	Apr. 29	. . . . .	Apr. 30	Apr. 29	May 7	. . . . .	Apr. 30	May 14	May 5
Rusty Blackbird . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	May 8	Mar. 27	. . . . .	Mar. 13	. . . . .	Apr. 19	. . . . .	Apr. 14	Apr. 10	May 1
Purple Grackle	Mar. 3	Feb. 15	Mar. 4	Mar. 1	Feb. 27	Feb. 13	Feb. 27	Feb. 27	Feb. 23	Feb. 15	Feb. 28	Mar. 4	Mar. 7	Feb. 27	Feb. 15	Feb. 27
Vesper Sparrow . . . . .	. . . . .	May 8	Apr. 5	Apr. 26	Mar. 21	Mar. 22	. . . . .	Mar. 12	. . . . .	Mar. 28	. . . . .	Apr. 11	. . . . .	Mar. 10	Mar. 23	Mar. 23
Savanna Sparrow . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	Apr. 17	. . . . .	Mar. 28	May 4	Mar. 14	. . . . .	Mar. 9	Mar. 20	. . . . .
Grasshopper Sparrow . .	Apr. 28	. . . . .	. . . . .	Apr. 19	Apr. 24	May 17	. . . . .	Apr. 30	. . . . .	Apr. 22	. . . . .	Apr. 30	. . . . .	Apr. 24	May 8	Apr. 24
Chipping Sparrow	Mar. 27	Apr. 15	Mar. 2	Mar. 30	Mar. 28	Apr. 5	Apr. 9	Mar. 28	Apr. 7	Mar. 28	Apr. 1	Mar. 14	Apr. 18	Mar. 20	Mar. 27	Mar. 28
Field Sparrow	Apr. 14	Mar. 30	Mar. 15	Mar. 29	Apr. 3	. . . . .	Mar. 24	Mar. 28	. . . . .	Mar. 8	Mar. 29	Mar. 28	Mar. 10	Feb. 14	. . . . .	Mar. 26
Swamp Sparrow . . . . .	. . . . .	. . . . .	Apr. 9	Apr. 17	. . . . .	. . . . .	. . . . .	Apr. 26	. . . . .	Mar. 30	. . . . .	May 2	. . . . .	Feb. 29	. . . . .	. . . . .
Fox Sparrow . . . . .	. . . . .	Apr. 11	Mar. 8	Mar. 10	Feb. 15	. . . . .	Mar. 12	Mar. 22	Mar. 21	Mar. 10	Mar. 14	Mar. 1	Mar. 10	Mar. 10	Mar. 14	Mar. 10
Cbrewink	May 9	Apr. 7	Apr. 26	Mar. 31	Mar. 31	Apr. 25	Apr. 19	Apr. 22	Apr. 25	Mar. 28	Apr. 18	May 2	. . . . .	Apr. 24	Apr. 19	Apr. 19
Rose-breasted Grosbeak.	May 12	. . . . .	. . . . .	May 11	. . . . .	. . . . .	Apr. 29	May 9	May 11	May 17	May 10	. . . . .	. . . . .	May 8	May 3	May 8
Indigobird	May 13	May 16	May 24	May 14	May 7	May 7	May 25	May 12	. . . . .	May 10	May 10	May 2	. . . . .	May 1	May 3	May 11
Scarlet Tanager	May 2	May 2	May 20	May 10	Apr. 30	May 3	Apr. 27	May 11	May 15	Apr. 30	May 5	May 2	. . . . .	Apr. 28	May 8	May 2
Purple Martin	Apr. 12	Apr. 16	. . . . .	. . . . .	May 20	Apr. 5	. . . . .	May 24	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	May 5	. . . . .	. . . . .

NAME.	Moorestown, N. J.	Haddonfield, N. J.	Pensauken, N. J.	Media, Pa.	Swarthmore, Pa.	Collingsdale, Pa.	Lansdowne, Pa.	Armore and Haverford, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	Germanstown, Phila.	Oak Lane, Phila.	Fox Chase, Phila.	Frankford, Phila.	Olney, Phila.	Bulk Arrival at Phila., 1908.
Cliff Swallow	May 4	Apr. 29	May 8	Apr. 25	Apr. 11	Apr. 25	Apr. 16	Apr. 23	Apr. 7	Apr. 11	Apr. 22	Apr. 13	Apr. 18	May 1	Apr. 24	Apr. 18
Barn Swallow	May 21	Apr. 28	May 10	May 10	Apr. 11	Apr. 29	May 14	May 24	Apr. 17	Mar. 29	Apr. 22	Apr. 13	Apr. 18	Mar. 30	Apr. 26	Apr. 12
Tree Swallow	May 2	May 2	May 24	May 12	Apr. 12	Apr. 29	May 14	May 24	May 24	Apr. 21	Apr. 22	May 1	Apr. 25	Apr. 28	Apr. 26	Apr. 21
Bank Swallow	May 2	May 2	May 24	May 12	Apr. 12	Apr. 29	May 14	May 24	May 24	Apr. 21	Apr. 22	May 1	Apr. 25	Apr. 28	Apr. 26	Apr. 21
Rough-winged Swallow	May 25	Apr. 29	Mar. 8	Mar. 24	Apr. 17	May 3	Apr. 16	Apr. 23	Apr. 7	Apr. 10	Apr. 25	Apr. 19	Apr. 24	Mar. 24	Apr. 26	Apr. 13
Cedarbird	May 4	Apr. 29	May 13	Apr. 24	Feb. 20	May 16	May 14	Apr. 23	May 11	May 13	May 20	Apr. 19	May 5	May 5	Apr. 24	May 8
Red-eyed Vireo	May 21	Apr. 29	May 24	May 13	May 17	May 8	May 5	May 5	May 11	May 9	Apr. 25	May 12	May 12	May 16	May 10	May 9
Warbling Vireo	Apr. 27	May 2	May 2	May 2	May 3	May 3	May 5	May 5	May 11	May 1	May 5	May 15	May 15	May 9	May 10	May 3
Yellow-throated Vireo	May 2	May 2	May 2	May 2	May 3	May 3	May 5	May 5	May 11	May 1	May 5	May 15	May 15	May 9	May 10	May 3
Solitary Vireo	Apr. 13	Apr. 26	Apr. 26	Apr. 28	Apr. 12	Apr. 26	Apr. 19	Apr. 15	Apr. 18	Apr. 26	May 9	May 12	May 12	Apr. 24	Apr. 19	May 9
White-eyed Vireo	Apr. 13	Apr. 28	Apr. 26	May 8	Apr. 25	Apr. 26	Apr. 22	Apr. 11	Apr. 25	Apr. 25	May 2	May 12	May 12	Apr. 30	May 9	Apr. 29
Black and White Warbler	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4
Worm-eating Warbler	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4
Blue-winged Warbler	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4
Parula Warbler	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 4
Yellow Warbler	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8
Black-throated Blue Warbler	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8
Myrtle Warbler	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8
Magnolia Warbler	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8
Chestnut-sided Warbler	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8
Black-poll Warbler	May 13	May 12	May 12	May 14	May 16	May 13	May 13	May 13	May 17	May 13	May 20	May 16	May 16	May 16	May 12	May 14
Blackburnian Warbler	May 8	May 13	May 2	May 10	May 12	May 16	May 16	May 16	May 17	May 13	May 20	May 16	May 16	May 16	May 12	May 14
Black-throated Green Warbler	May 8	May 9	May 9	May 10	May 11	May 11	Apr. 29	Apr. 28	Apr. 25	Apr. 25	May 13	May 16	May 16	May 8	May 4	May 8

NAME.	Moorestown, N. J.	Haddonfield, N. J.	Pensauken, N. J.	Media, Pa.	Swarthmore, Pa.	Collingdale, Pa.	Lansdowne, Pa.	Ardmore and Haverford, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	Germanstown, Phila.	Oak Lane, Phila.	Fox Chase, Phila.	Frankford, Phila.	Olney, Phila.	Bulk Arrival at Phila., 1908.
Pine Warbler . . . . .	. . . . .	May 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Yellow Palm Warbler . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Prairie Warbler . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Ovenbird	Apr. 26	May 8	Apr. 26	Apr. 25	Apr. 24	May 3	Apr. 28	Apr. 26	Apr. 25	Apr. 24	Apr. 26	Apr. 26	. . . . .	. . . . .	May 10	Apr. 26
Water Thrush	May 13	. . . . .	. . . . .	Apr. 25	Apr. 29	. . . . .	Apr. 28	Apr. 26	. . . . .	Apr. 26	May 2	. . . . .	. . . . .	. . . . .	. . . . .	Apr. 28
Kentucky Warbler . . . . .	. . . . .	. . . . .	. . . . .	May 10	May 11	. . . . .	May 4	May 3	. . . . .	May 10	May 5	May 16	. . . . .	. . . . .	. . . . .	May 9
Maryland Yellowthroat	Apr. 27	Apr. 23	Apr. 26	Apr. 25	Apr. 24	Apr. 26	Apr. 25	Apr. 26	Apr. 25	Apr. 19	Apr. 22	Apr. 24	Apr. 18	Apr. 28	May 11	May 9
Chat	May 13	May 17	. . . . .	May 8	Apr. 30	Apr. 26	Apr. 26	May 12	. . . . .	May 9	May 4	May 4	May 16	Apr. 28	May 10	May 9
Canada Warbler	May 12	May 13	. . . . .	May 10	May 17	. . . . .	May 14	May 13	. . . . .	May 13	May 5	. . . . .	. . . . .	May 16	May 10	May 13
Redstart	May 13	May 13	. . . . .	May 10	Apr. 26	May 8	Apr. 28	May 1	Apr. 25	Apr. 25	Apr. 28	Apr. 30	. . . . .	Apr. 27	Apr. 24	May 1
Catbird	Apr. 26	Apr. 26	Apr. 26	Apr. 25	Apr. 23	Apr. 26	Apr. 24	Apr. 26	Apr. 25	Apr. 24	Apr. 22	Apr. 26	May 16	Apr. 26	Apr. 25	Apr. 25
Brown Thrasher	Apr. 14	Apr. 16	Apr. 9	Apr. 19	Apr. 17	Apr. 23	Apr. 19	Apr. 10	Apr. 25	Apr. 8	Apr. 23	Apr. 19	May 16	Apr. 6	Apr. 17	Apr. 19
House Wren	Apr. 26	Apr. 23	Apr. 26	Apr. 23	Apr. 16	. . . . .	Apr. 19	Apr. 23	Apr. 25	Apr. 21	Apr. 20	May 4	. . . . .	Apr. 26	Apr. 24	Apr. 23
Long-bill'd Marsh Wren . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	May 1	. . . . .	. . . . .
Ruby-crowned Kinglet	Apr. 14	. . . . .	Apr. 9	Apr. 12	Apr. 10	. . . . .	Apr. 11	Apr. 13	Apr. 7	Apr. 8	Apr. 9	Apr. 5	. . . . .	Apr. 11	Apr. 12	Apr. 10
Wood Thrush	May 8	Apr. 29	May 2	Apr. 26	Apr. 27	Apr. 26	Apr. 23	Apr. 26	Apr. 25	Apr. 24	Apr. 23	Apr. 27	Apr. 19	Apr. 27	Apr. 25	Apr. 26
Wilson's Thrush	May 3	. . . . .	May 16	May 3	Apr. 25	. . . . .	May 1	May 1	May 1	Apr. 30	May 3	May 2	. . . . .	. . . . .	May 9	May 1
Gray-checked Thrush . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	May 17	May 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Olive-backed Thrush	May 13	. . . . .	. . . . .	. . . . .	May 17	May 3	Apr. 23	Apr. 11	May 11	May 11	May 17	. . . . .	. . . . .	May 18	May 8	May 11
Hermit Thrush . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	May 17	Apr. 12	Apr. 11	Apr. 14	Apr. 7	Apr. 10	Apr. 9	Apr. 12	. . . . .	Apr. 1	Apr. 9	Apr. 12
Robin	Mar. 2	Mar. 2	Mar. 3	Mar. 3	Feb. 12	Mar. 7	Feb. 23	Mar. 2	Feb. 27	Feb. 15	Feb. 14	May 13	Mar. 14	Feb. 27	Mar. 2	Mar. 2
Bluebird	Mar. 2	Mar. 2	Feb. 28	Res.	Feb. 16	Feb. 17	Feb. 17	Mar. 3	Mar. 3	Feb. 16	Feb. 27	Feb. 27	Mar. 15	Feb. 27	Mar. 2	Feb. 27

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NAMES.	Cape May, N. J. E. 13; S. 72.	Vineyard, N. J. E. 7; S. 32.	Dorsetown, N. J. E. 11; S. 28.	Kennett Square, Pa. W. 30; S. 8.	Mendenhall, Pa. W. 26; S. 8.	Concordville, Pa. W. 20; S. 5.	Collegeville, Pa., W. 16; N. 18.	Rancocas, N. J. E. 16; N. 4	Beverly, N. J. E. 13; N. 8.	Burlington, N. J. E. 17; N. 9	Bristol, Pa. E. 17; N. 10.	Bordentown, N. J. E. 25; N. 13	Yardville, N. E. 25; N. 15.	Trenton, N. J. E. 23; N. 16.	Princeton, N. J. E. 28; N. 29.	Glenoldie, Pa. E. 0; S. 1.	Woodbourne, Pa. E. 15; S. 17	George School, Pa. E. 11; N. 18.	Easton, Pa. W. 2; N. 30	Columbia, Pa. W. 7; N	Martinsburg, Pa. W. 74; N	Lop, Pa. W
Flicker	Res.	Res.	Mar. 20			Mar. 12	Mar. 15	Feb. 23	Mar. 20	Mar. 8	Mar. 20	Mar. 15	Res.	Res.	Res.	Res.	Res.	Res.	Mar. 27	Mar. 27	Mar. 27	Mar. 27
Whip-poor-will	Apr. 13	Apr. 7	Apr. 8		Apr. 26		Apr. 25				Apr. 19					May 9				Apr. 19	Apr. 19	Apr. 19
Nighthawk						May 22	May 20				May 2					May 7		May 17	May 17	May 2	Apr. 27	Apr. 27
Chimney Swift	Apr. 26	Apr. 10	Apr. 28	Apr. 20	Apr. 27	Apr. 22	Apr. 22	Apr. 23	Apr. 11	Apr. 5	Apr. 21	Apr. 25	Apr. 25	Apr. 25	Apr. 23	Apr. 21	Apr. 27	Apr. 22	Apr. 22	Apr. 26	Apr. 21	Apr. 21
Hummingbird		May 24				Apr. 29	Apr. 30	May 13		May 4		May 8	May 11	May 20		May 11		May 8	May 9		May 20	May 24
Kingbird	Apr. 28		Apr. 27	Apr. 27	Apr. 28	Apr. 25	Apr. 30	May 13				May 9	Apr. 12	May 3	Apr. 30	Apr. 25	Apr. 27	May 6	Apr. 28	May 6	May 15	May 15
Great-crested Flycatcher	Apr. 26	May 23	May 3	Apr. 26	Apr. 26	Apr. 25	May 11	Apr. 26	May 3	Apr. 30	Apr. 20	Apr. 6	May 8	May 10	Apr. 29	Apr. 27	Apr. 27	Apr. 29	Apr. 29		May 15	May 15
Phoebe		Apr. 15		Mar. 18	Mar. 18	Mar. 12	Mar. 16	Mar. 15	Apr. 4	Mar. 27	Mar. 15	Apr. 10	Mar. 14	Mar. 26	Mar. 13	Mar. 14	Mar. 26	Mar. 11	Mar. 22	Apr. 1	Mar. 21	Mar. 21
Bobolink	May 8				Apr. 27	May 11					May 9					May 19	Apr. 26		May 7		May 7	May 7
Cowbird	May 2				Apr. 8	Mar. 3	Apr. 1				Apr. 25					Apr. 25			Mar. 11	Mar. 17	May 12	May 12
Red-winged Blackbird	Res.	Apr. 16	Mar. 3	Mar. 12	Mar. 1	Feb. 27	Mar. 11	Mar. 14	Feb. 16	Mar. 28	Mar. 2	Mar. 13	Mar. 3	Feb. 26	Feb. 27	Mar. 3	Mar. 30	Mar. 3	Mar. 29	Mar. 12	Mar. 12	Mar. 12
Baltimore Oriole	Apr. 26	May 4	Apr. 26	Apr. 25	Apr. 28	Apr. 26	Apr. 28	Apr. 29	Apr. 26		Apr. 30	Apr. 25	Apr. 30	May 5	May 8	May 2	May 10	Apr. 26	Apr. 28	May 3	May 3	May 3
Purple Grackle	Feb. 21				Feb. 16	Mar. 12	Feb. 15	Mar. 4	Mar. 2	Mar. 9	Mar. 7	Mar. 14	Mar. 3	Feb. 7	Feb. 27	Feb. 23	Mar. 3	Feb. 16	Mar. 5	Mar. 4	Mar. 4	Mar. 4
Chipping Sparrow	Mar. 31	Apr. 2	Mar. 27	Mar. 28	Apr. 5	Mar. 28	Mar. 30	Mar. 28	Mar. 27	Apr. 5	Mar. 28	Mar. 8	Apr. 6	Mar. 26	Mar. 29	Mar. 25		Mar. 27	Mar. 30	Apr. 6	Apr. 10	Apr. 21
Chewink	Mar. 14	Apr. 23	Apr. 14	Apr. 23	Apr. 24	Apr. 18	Apr. 23	Apr. 14	Apr. 19	Apr. 20	Apr. 28	Apr. 19	Apr. 25	Apr. 9	Apr. 24	Apr. 7	Apr. 27	Apr. 6	Apr. 26	Apr. 7	Mar. 8	Apr. 25
Indigobird	May 7	May 28		May 4	May 13	Apr. 28	May 18	May 14			May 14	May 8	May 11	May 10	May 10	May 2	May 17	May 1	May 9	May 14	May 10	May 11
Scarlet Tanager	May 5		May 10	May 4	May 13	May 12	May 11	May 13	May 9	May 8	May 9	May 9	May 10	May 9	May 13	Apr. 22	May 2	Apr. 20		May 16		May 13
Purple Martin	Apr. 18	Apr. 11	Apr. 14	Apr. 6	May 24	May 19			May 9		Apr. 19	Apr. 23	May 4	Apr. 29	Apr. 13	May 18	May 18					
Barn Swallow	Apr. 24			May 3	Apr. 18	Apr. 14	Apr. 11	Apr. 23		Apr. 27	Apr. 12	Apr. 20	Apr. 12	Apr. 26	Apr. 12	Apr. 26	Apr. 12	Apr. 30	Apr. 12		Apr. 22	Apr. 22
Red-eyed Vireo		May 14	May 13	May 10	Apr. 29	May 9	May 13	May 13	Apr. 29	May 11	May 4	Apr. 27	May 17	May 20	May 12	May 8	May 17	May 12	May 23		Apr. 30	Apr. 30
Black and White Warbler		May 18	Apr. 26	May 3		Apr. 28	Apr. 27	Apr. 26	May 3	Apr. 30	May 9	Apr. 10	Apr. 20	Apr. 25	Apr. 23	Apr. 24		Apr. 28	May 3		Apr. 29	Apr. 29
Chestnut-sided Warbler		May 13		May 10		May 11	May 4	May 14		May 8	May 14	May 4	May 17	May 1	May 9	May 3		May 8	May 13		Apr. 29	Apr. 29
Ovenbird	May 10		Apr. 26	Apr. 26	Apr. 26	Apr. 24	Apr. 28	Apr. 26	Apr. 26	Apr. 24	Apr. 28	May 1	Apr. 26	May 10	May 8	Apr. 25	May 2	Apr. 24	Apr. 28	Mar. 8	May 6	May 6
Maryland Yellowthroat	Apr. 26	Apr. 24	Apr. 26	Apr. 23		Apr. 24	Apr. 28	Apr. 24	May 3	Apr. 25	May 8	Apr. 24	Apr. 24	Apr. 23	Apr. 27	May 17	Apr. 26	Apr. 30			May 6	May 6
Chat	May 11	May 28	May 17		May 11	Apr. 28		May 10	May 10		May 14	May 4	May 8	May 13	May 8	Apr. 28	May 11	May 18	May 9		May 10	May 10
Catbird	Apr. 26	Apr. 12	Apr. 26	Apr. 22	May 1	Apr. 24	Apr. 27	Apr. 26	Apr. 26	May 2	Apr. 28	Apr. 27	Apr. 26	Apr. 26	Apr. 21	Apr. 19	Apr. 26	Apr. 26	Apr. 26	May 10	May 14	May 14
Brown Thrasher		Apr. 4	Apr. 23	Apr. 20	Apr. 13	Apr. 13	Apr. 32	Apr. 24	Apr. 12	Apr. 20	Apr. 25	Apr. 19	Apr. 24	Apr. 15	Apr. 23	Apr. 12	Apr. 24	Apr. 19	Apr. 19	Apr. 10	Apr. 26	Apr. 26
House Wren	Apr. 26		Apr. 15	Apr. 20	Apr. 25	Apr. 14	Apr. 27	Apr. 25	Apr. 19		May 3	Apr. 25	Apr. 14	Apr. 26	May 8	Apr. 24	May 18	Apr. 29	Apr. 17		May 15	Apr. 26
Wood Thrush	Apr. 26			Apr. 26	Apr. 26	Apr. 27	Apr. 28	Apr. 29	Apr. 26	Apr. 27	May 5	Apr. 25	Apr. 29	Apr. 27	May 8	Apr. 26	May 8	Apr. 26	Apr. 29		Apr. 30	Apr. 30
Hermit Thrush				Apr. 3		Apr. 13	Apr. 7		Apr. 12		Apr. 12	Apr. 20	Apr. 14		Apr. 14	Mar. 24		Apr. 6	Apr. 11		Apr. 10	Apr. 10
Robin	Res.		Feb. 14	Mar. 3		Mar. 1	Mar. 9	Mar. 3	Mar. 1	Mar. 2	Feb. 29	Feb. 20	Mar. 3	Res.	Mar. 2	Feb. 22	Mar. 3	Mar. 3	Mar. 7	Mar. 5	Mar. 2	Mar. 2
Bluebird	Res.		Feb. 15			Feb. 16	Mar. 10	Mar. 5	Mar. 8	Mar. 5	Mar. 7	Res.	Mar. 8	Res.	Res.	Feb. 16	Res.	Res.	Mar. 7	Mar. 8	Mar. 7	Mar. 8

5 Millville, N. J.

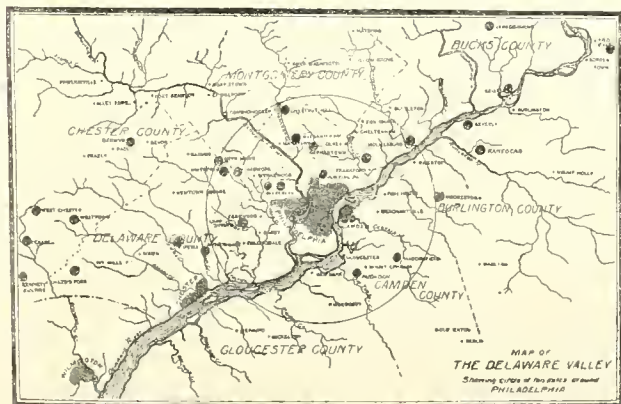


TABLE II.

SPRING MIGRATION, 1906

EARLIEST DATES OF ARRIVAL OF THIRTY-TWO SPECIES AT TWENTY-TWO STATIONS OUTSIDE THE PHILADELPHIA CIRCLE.

*List of Other Species Reported by Observers During 1908, and
Additional Notes. Winter Notes Refer to Winter of
1907-8. Localities are in Pennsylvania
Unless Otherwise Indicated.*

Colymbus auritus, Horned Grebe. Cape May, N. J., March 31 (*Hand*); Bridesburg, March 19 and 25 (*Miller*).

Podilymbus podiceps, Pied-billed Grebe. Beverly, N. J., March 21, 24, 27 and 30 (*Street*); George School, March 23 (*Scholars*); George School, March 25 (*Packer*); Wayne, March 29 (*Pearson*); Radnor, March 23 (*Redfield*); Tinicum, March 26 (*Redfield*); Princeton, N. J., Sept. 26-Oct. 31, March 13-Apr. 30 (*Rogers*); Richmond, March 21 (*Miller*); Delair, N. J., March 29 (*Miller*).

Gavia immer, Loon. Beverly, N. J., four on the river, April 25 (*Street*); four at Cape May, N. J., May 7 (*Hand*).

Larus argentatus, Herring Gull. Three near Yardley, N. J., April 16 (*Packer*); last seen at Cape May, N. J., May 8 (*Hand*); Berwyn, two April 1 (*Redfield*); Wayne one April 24 (*Pearson*); Princeton, N. J., March 7 (*Rogers*); Frankford, Sept. 19-May 6 (*Miller*); Tinicum, May 5 (*Harlow*).

Larus atricilla, Black-headed Gull. Cape May, N. J., April 20 (*Hand*).

Sterna hirundo, Bennett, N. J., May 9 (*Harlow*).

Phalacrocorax dilophus, Double-crested Cormorant. Flocks passed along shore all day at Cape May, N. J., April 21 (*Hand*).

Merganser americanus, American Merganser. Princeton, N. J., March 13 (*Rogers*); Bridesburg, May 19 (*Miller*); George School, three on Jan. 19, ten April 13 (*Packer*); plentiful at Cape May, N. J., April 6 (*Hand*).

Merganser serrator, Red-breasted Merganser. One shot Tinicum, Mar. 21 (*Redfield* and *Pearson*).

Lophodytes cucullatus, Hooded Merganser. Princeton, N. J., April 22 (*Rogers*); one shot Salem, N. J., March 21 (*Miller*).

Anas boschas, Mallard Chalfont. Nov. 16, 1907 (*Harlow*).

Anas rubripes, Black Duck. One shot Tinicum, Mar. 21 (*Redfield* and *Pearson*); Princeton, N. J., Oct. 3, Mar. 15-Apr. 2 (*Rogers*); Fish House, N. J., Mar. 25 (*Miller*); Tinicum, Mar. 26 (*Harlow*).

Mareca americana, Baldpate. Four shot Tinicum, Mar. 21 (*Redfield* and *Pearson*).

Dafila acuta, Pintail. One shot Tinicum, March 26 (*Redfield*).

Aix sponsa, Wood Duck. Princeton, N. J., last seen Oct. 31, 1907, first seen April 12, 1908 (*Rogers*); nest with sixteen eggs at Salem, N. J., April 26 (*W. B. Crispin*).

Aythya marila, Greater Scaup Duck. One shot Tinicum, March 21 (*Redfield* and *Pearson*); Princeton, N. J., Oct. 13, 1907 (*Rogers*).

Aythya affinis, Lesser Scaup Duck. Seven shot Tinicum, March 21 (*Redfield* and *Pearson*); four at Princeton, N. J., March 27–April 7 (*Rogers*); Fish House, N. J., March 25 and April 12 (*Miller*).

Charitonetta albeola, Bufflehead. Princeton, N. J., a pair March 12 and 14 (*Rogers*).

Harelda hyemalis, Old Squaw. Pair at Yardley, N. J. (*Packer*); Fish House, N. J., March 25 (*Miller*).

Erismatura jamaicensis, Ruddy Duck. Princeton, N. J., Oct. 13–19, 1907 (*Rogers*).

Branta bernicla, Brant. Beverly, N. J., March 29 (*Street*).

Branta canadensis, Canada Goose. Glenside, twelve on Sept. 19 (*Harlow*).

Botaurus lentiginosus, American Bittern. Ithaca, April 8 (*Bartram*); Bristol, April 12 (*Keim*); Cape May, N. J., April 12 (*Hand*); Wayne, March 27, April 17 (*Pearson*); and one shot April 9 (*Redfield*); Fox Chase, April 7 (*Miller*).

Ixobrychus exilis, Least Bittern. Richmond, eggs May 27 (*Miller*); Tinicum, May 22 (*Harlow*); eggs at Hackensack, N. J. June 6 (*Harlow*).

Ardea herodias, Great Blue Heron. Haverford, March 28 (*Petry* and *Lewis*); Bristol, February 11, 25 and 27 (*Keim*); Cape May, N. J., a few reported all winter, plentiful March 25–April 2 (*Hand*); Wayne, April 19 (*Pearson*); Tinicum, January 4 (*Redfield*); Moorestown, N. J., April 27 (*Mickle*); George School, April 7 (*Packer*); Princeton, N. J., Sept. 26–Oct. 19, 1907, April 4–26 (*Rogers*); Pensauken Creek, N. J., April 17, had eggs at Salem, N. J., April 12 (*Miller*).

Florida carulea, Little Blue Heron. Flock of about a dozen at Palatine, N. J., July 17, two adults, rest young (*Bartram*).

Nycticorax n. naevius, Night Heron. Bird in gray plumage at George School, Jan. 19 (*Packer*); numerous at Bennett, N. J., May 23 (*Harlow*).

Rallus elegans, King Rail. Bridesburg, May 24, nest and eggs, June 12 (*Miller*); Richmond, Sept. 5, 1907 (*Harlow*).

Rallus virginianus, Virginia Rail. Concordville, April 28 (*Styer*); Bridesburg, May 24 (*Miller*).

Gallinula galeata, Florida Gallinule. Richmond, April 25, seven nests found, eggs nearly hatched, May 27 (*Miller*); eggs at Hackensack, N. J., June 6 (*Harlow*).

Fulica americana, Coot. Princeton, Oct. 14, 1907 (*Rogers*).

Philohela minor, Woodcock. Edge Hill, Nov. 23, 1907, and March 24 (*Harlow*); Wayne, March 30, May 3 (*Pearson*); Princeton, N. J., last seen 1907 on Nov. 13, first, March 13 (*Rogers*); Frankford, March 9, April 7; Bustleton, May 9, and Chestnut Hill, July 1 (*Miller*); eggs just hatching in nest at Bennett, N. J., May 9 (*Harlow*); Vineland, N. J., March 27 (*Prince*); George School, March 8 (*Packer*); Lopez, March 24 (*Behr*); Cape May, N. J., Feb. 17, not so great a spring flight as usual; seen daily, July 3 (*Hand*).

Gallinago delicata, Wilson's Snipe. Kennett Square, March 16 (*Pennock*); Concordville, April 30 (*Styer*); Vineland, N. J., March 9 (*Prince*); George School, March 15 (*Packer*); Cape May, N. J., March 14 (*Hand*); Wayne, April 16, 21, 22 (*Pearson*); Bridesburg, May 14 (*Miller*); League Island, March 25 (*Harlow*).

Tringa minutilla, Least Sandpiper. Cape May, N. J., April 28 (*Hand*); Wayne, May 2, 3, 16 (*Pearson*); Bennett, N. J., May 23 (*Redfield*); Princeton, N. J., one, April 30 (*Rogers*); Frankford, May 12; Richmond, May 27 (*Miller*).

Totanus melanoleucus, Greater Yellowlegs. Flock of twelve passed over Lansdowne, May 11, 6:20 p. m. (*Carter*); Princeton, N. J., Oct. 13, 1907 (*Rogers*); Bridesburg, May 14 (*Miller*); Tinicum, May 22 (*Harlow*).

Helodromas solitarius, Solitary Sandpiper. Last seen at Frankford, May 20 (*Miller*).

Bartramia longicauda, Bartramian Sandpiper. George School, April 12 and 24 (*Roberts and Packer*).

Numenius hudsonicus, Hudsonian Curlew. Cape May, N. J., April 18 (*Hand*).

Squatarola squatarola, Black-breasted Plover. Cape May, N. J., May 5 (*Hand*).

Oxyechus vociferus, Kildeer. One pair nested at Edge Hill, another at Fort Washington; rare breeder here (*Harlow*).

Arenaria interpres, Turnstone. Cape May, N. J., May 5 (*Hand*).

Hæmatopus palliatus, Oyster Catcher. One shot on Anchoring Island, Little Egg Harbor, N. J., July 31, 1907; in collection of C. K. Drinker (*Spach*).

Zenaidura macroura, Mourning Dove. Flock of thirty-six at Maple Shade, N. J., Dec. 25, 1907; eggs, Pensauken, N. J., April 17 (*Miller*).

Circus hudsonius, Marsh Hawk. Wayne, Sept. 14–April (*Pearson*).

Accipiter cooperi, Cooper's Hawk. Nest and eggs, Edge Hill, April 24; eggs at Doylestown, May 2 (*Harlow*).

Buteo borealis, Red-tailed Hawk. Wayne, Oct. 27–April 5 (*Pearson*); Princeton, N. J., Oct. 31–April 1 (*Rogers*).

Buteo lineatus, Red-shouldered Hawk. Wayne, August 18–March 12 (*Pearson*); Princeton, N. J., October 13–March 15 (*Rogers*).

Buteo platypterus, Broad-winged Hawk. Wayne, first seen, April 17; nest and eggs, May 16 (*Pearson*); Bustleton, April 14 (*Miller*); Princeton, N. J., last seen, Oct. 31, 1907; first, April 21 (*Rogers*).

Archibuteo lagopus sancti-johannis, Rough-legged Hawk. George School, Jan. 19 and Feb. 27 (*Packer*); one shot at Bordentown, N. J., March 13 (*Redfield*); another at Bennett, N. J., Dec., 1907 (*Harlow*).

Haliaeetus leucocephalus, Bald Eagle. Downingtown, May 10 (*Bartram*); three seen at one time, Cape May, N. J., April 26 (*Hand*); Wayne, one shot, Sept. 20 (*Pearson*); Edge Hill, Aug. 20–21, 1907 (*Harlow*).

Falco columbarius, Pigeon Hawk. Princeton, N. J., Oct. 14, 1907 (*Rogers*).

Strix pratincta, Barn Owl. One flew over Lansdowne, screaming, at 8:10 p. m., April 7 (*Carter*); Edge Hill, April 29 (*Harlow*); one found dead at Tinicum, March 26 (*Redfield*).

Asio wilsonianus, Long-eared Owl. Moorestown, N. J., Feb. 10 (Mickle); Two shot at Edge Hill, Nov. 9, 1907 (Harlow).

Asio accipitrinus, Short-eared Owl. One at Tinicum, March 21 and two found dead (Pearson); one shot Bridesburg, Dec. 6, 1907 (Harlow).

Cryptoglaux acadicus, Acadian Owl. Frankford, Nov. 11 and Dec. 18, 1907 (Miller).

Megascops asio, Screech Owl. Nests with eggs Wayne, May 5 (Redfield); Glenside, April 5 (Harlow).

Bubo virginianus, Great Horned Owl. Bustleton, Dec. 25, 1907 (Miller).

Ceryle alcyon, Kingfisher. Tinicum, Jan. 4, Wayne, Dec. 22, 1907 (Redfield); one wintered at Tinicum (Harlow).

Dryobates villosus, Hairy Woodpecker. Cheltenham, one wintered (G. S. Morris), Beverly, N. J., April 5 (Street); Bristol, Nov. 16 and 28, 1907 (Keim); Moorestown, N. J., Dec. 7, 1907 (Mickle); nested at Chamounix, W. Fairmont Park in 1907, two young with parents May 13 (Onderdonk); nest at Oak Lane, April 28 (Harlow).

Sphyrapicus varius, Yellow-bellied Sapsucker. Frankford, last seen May 1 (Miller).

Phlaeotomus pileatus, Pileated Woodpecker. Several at Laanna, Pike Co., Apr. 13-20 (Harlow).

Colaptes auratus luteus, Flicker. Fairmount Park, Dec. 21, Wayne, Dec. 22 and Jan. 19 (Redfield); wintered at Tinicum, Edge Hill and Oak Lane (Harlow); wintered at Frankford (Miller).

Chordeiles virginianus, Nighthawk. Princeton, N. J., Sept. 30 and one Oct. 5, 1907 (Rogers).

Chaetura pelagica, Chimney Swift. Princeton, N. J., last seen Oct. 14, 1907 (Rogers).

Trochilus colubris, Hummingbird. Nest at Yardville, N. J., June 9, 1907, young were fledged and gone by June 22 (Allinson); Princeton, N. J., last seen Sept. 22, 1907 (Rogers).

Myiarchus crinitus, Great Crested Flycatcher. Eggs at Bustleton, May 15 (Miller); and at Oak Lane, June 5 (Harlow).

Sayornis phoebe, Phoebe. Princeton, N. J., last seen Oct. 22, 1907 (Rogers); young left nest at Pensauken, N. J., May 16,

second set in same nest June 13 (*Miller*); one at Edge Hill Dec. 25, 1907 (*Harlow*).

Empidonax vireescens, Green-crested Flycatcher. Eggs May 29 at Bustleton in a "patched up" old Vireo's nest (*Miller*).

Otocoris alpestris, Horned Lark. Flock at George School, Nov. 9, 1907 (*Packer*), Cape May, N. J., March 14 (*Hund*); Wayne, Feb. 2 and 16 (*Pearson*).

Cyanocitta cristata, Blue Jay. Swarthmore, April 19 (*Roberts*); Haverford, April 25 (*Petry* and *Lewis*); Lansdowne, April 20, (*Pennock* and *Jacob*); Media, April 4 (*Allen*); Oak Lane, April 23 (*J. W. Allen*); Germantown, April 28 (*Justice*); Olney, April 21 (*Morris*); locally resident at Bristol, fifteen on March 1 (*Keim*); Wayne, March 14 (*Pearson*).

Corvus brachyrhynchos, Crow. Nest with eggs Glenside, March 30 (*Harlow*); six just hatched Pensauken, N. J., April 17, left nest about May 22 (*Miller*).

Corvus ossifragus, Fish Crow. Eggs, Bennett, N. J., May 10 (*Harlow*).

Sturnus vulgaris, European Starling. Five at Brown's Mills, N. J., April 12 (*Bartram*).

Dolichonyx oryzivorus, Bobolink. Still at Concordville, May 19 (*Styer*); several at Newtown, Bucks Co., May 30, (*Harlow*).

Euphagus carolinus, Rusty Grackle. Princeton, N. J., last seen Oct. 19, 1907, first April 4 (*Rogers*.)

Quiscalus quiscula, Purple Grackle. Princeton, N. J., last seen Oct. 22, 1907 (*Rogers*).

Carpodacus purpureus, Purple Finch. Haverford, April 14 (*Petry* and *Lewis*); Lansdowne, Jan 4-23 (*Pennock*); Oak Lane, April 12 (*Allen*); Kennett Square, April 26 (*Pennock*); Collegeville, March 23 (*Fox*); Wayne, Oct. 27-Dec. 27, 1907, arrived Apr. 4, 1908 (*Pearson*); Princeton, N. J., Sept. 26-Nov. 13, 1907 and Apr. 21-May 9 (*Rogers*); Frankford, Oct. 16-March 24 (*Miller*).

Loxia curvirostra americana, Crossbill. Six at Stafford Forge, N. J., May 17 (*Hill*).

Acanthis linaria, Redpoll. Near Trenton, N. J. Feb. 13-15 (*Abbott*); flock of nine at Frankford, March 9 (*Miller*).

Spinus pinus, Pine Siskin. Haverford, April 28-May 5

(*Petry and Lewis*); Easton, May 9 (*Marr*); Near Trenton, N. J., during February (*Abbott*); Swarthmore, ten on Feb. 23, one at Wayne, May 5 (*Redfield*).

Plectrophenax nivalis, Snowflake. Two shot from flock at Bridesburg in November (*Miller*).

Poocetes gramineus, Vesper Sparrow. Princeton, N. J., last seen Nov. 11, 1907 (*Rogers*); one shot Edge Hill, Dec. 21, 1907 (*Harlow*).

Passerculus sandw. savanna, Savanna Sparrow. One shot at Tinicum, Feb. 29 (*Redfield*); Princeton, N. J., last seen, Oct. 31, 1907 (*Rogers*).

Coturniculus s. passerinus, Grasshopper Sparrow. Eggs, Newtown, May 30 (*Harlow*).

Ammodramus henslowii, Henslow's Sparrow. Bennett, N. J., May 23 (*Redfield*); Rio Grande, N. J., May 10 (*Harlow*); nest, Cape May, N. J., May 25 (*Harlower*).

Zonotrichia leucophrys, White-crowned Sparrow. Lansdowne, May 10, several (*A. J. Pennock*); Kennett Square, May 10 and 11 (*C. J. Pennock*); Collegeville, May 13 (*Fox*); Easton, May 16 (*Marr*); Concordville, May 11-18 (*Styer*); Valley Forge, May 9 (*Pearson*); Princeton, N. J., May 9 and 10 (*Rogers*); Frankford, May 12 and 14 (*Miller*); Valley Forge, May 9; Wayne, May 11 (*Redfield*).

Zonotrichia albicollis, White-throated Sparrow. Wayne, Sept. 30-May 16, several wintered (*Pearson*); Princeton, N. J., Oct. 3-31, a few wintered; last seen, May 13 (*Rogers*); Glenside, Sept. 18-May 25 (*Harlow*); Frankford, Sept. 19-May 21 (*Miller*); wintered at Haverford (*Petry and Lewis*); last seen at Lansdowne, May 11 (*Jacob*); Bryn Mawr, Sept. 30-May 13 (*Thomas*); Kennett Square, May 13 (*Pennock*); Bristol, May 14 (*Keim*); Concordville, May 17 (*Styer*); George School, April 23-May 10 (*Parker*); Ardmore, May 13 (*Baily*); Pensauken, N. J., May 8 (*Hunt*); Moorestown, N. J., Oct. 5, 1907-May 13 (*Mickle*); Princeton, N. J., Oct. 3-31, 1907, a few wintered; last seen in spring, May 13 (*Rogers*); two wintered at Frankford; last seen, May 21.

Spizella monticola, Tree Sparrow. Wayne, Oct. 12-March 27 (*Pearson and Redfield*); Princeton, N. J., Oct. 31-April 23

(*Rogers*); Frankford, Sept. 27–April 7 (*Miller*); Glenside, Oct. 5–April 21 (*Harlow*); Bristol, Oct. 27–March 21 (*Keim*); Easton, Nov. 16–March 25 (*Marx*); George School, Nov. 10–March 27 (*Packer*).

Spizella socialis, Chipping Sparrow. Princeton, N. J., last seen, Oct. 19, 1907 (*Rogers*).

Spizella pusilla, Field Sparrow. Princeton, N. J., last seen, Oct. 31, 1907; one, Feb. 2 (*Rogers*).

Junco hyemalis, Junco. Wayne, Oct. 5–May 5 (*Pearson*); Princeton, N. J., Oct. 12–April 26 (*Rogers*); Frankford, Oct. 2–April 29 (*Miller*); Glenside, Sept. 27–May 4 (*Harlow*); Moorestown, N. J., Oct. 5, 1907–April 23 (*Mickle*); last seen at Haverford, April 24 (*Petry* and *Lewis*); Oak Lane, April 23 (*Allen*); Bryn Mawr, Sept. 30–May 1 (*Thomas*); Kennett Square, April 23 (*Pennoch*); Bristol, Oct. 27–April 5 (*Keim*); Easton, May 16 (*Marx*); Downstown, N. J., Oct. 19–April 24 (*Fair*); Bordentown, N. J., Sept. 28–April 17 (*Flynn*); Concordville, May 12 (*Styer*); Yardville, N. J., Oct. 10–April 14 (*Allinson*); Willow Grove, April 29 (*Miller*).

Melospiza c. melodia, Song Sparrow. Arrived at Lopez, March 13 (*Behr*).

Melospiza georgiana, Swamp Sparrow. Eggs at Bridesburg, May 19; young left nest, June 3 (*Miller*); eggs at Tinicum, May 22 (*Harlow*).

Passerella iliaca, Fox Sparrow. Princeton, N. J., Oct. 31–Nov. 13, 1907; March 13–25 (*Rogers*); Fairmount Park, one, Dec. 26, 1907; Delair, N. J., Dec. 25 (*Miller*); Edge Hill, Dec. 22, 1907 (*Harlow*).

Pipilo erythrophthalmus, Chewink. One wintered in the Wisahickon Valley, winter 1907–8 (*Day*); Princeton, N. J., Oct. 31, 1907 (*Rogers*).

Cardinalis cardinalis, Cardinal. Several pairs all winter at Haverford (*Petry* and *Lewis*) and at Media (*Palmer*); several all winter at Collegeville (*Fox*); eggs, Pensauken, N. J., April 17 (*Miller*); nest with eggs at Germantown, April 20 (*J. R. Pickering*); nest with eggs, George School, April 10 (*Packer*); Wayne, April 14 (*Redfield*); rare at Glenside, one seen March 14 (*Harlow*).

Zamelodia ludoviciana, Rose-breasted Grosbeak. Princeton, N. J., last seen, Sept. 22, 1907 (*Rogers*).

Piranga erythromelas, Scarlet Tanager. Princeton, N. J., last seen, Oct. 12, 1907 (*Rogers*).

Progne subis, Purple Martin. Eggs at Bennett, N. J., June 3 (*Harlow*).

Petrochelidon lunifrons, Cliff Swallow. Small colony at Edge Hill (*Harlow*).

Iridoprocne bicolor, Tree Swallow. Princeton, N. J., last seen, Oct. 19, 1907 (*Rogers*).

Lanius borealis, Northern Shrike. One at Frankford early in December, 1907 (*G. S. Morris*); Bristol, Jan. 1 (*Keim*); Princeton, N. J., Nov. 23 (*Rogers*).

Lanius lud. migrans, Migrant Shrike. One shot, Edge Hill, March 21 (*Harlow*).

Vireo olivaceus, Red-eyed Vireo. Eggs at Frankford, June 4 (*Miller*); Princeton, N. J., last seen, Sept. 30, 1907 (*Rogers*).

Vireo noveboracensis, White-eyed Vireo. Eggs, Maple Shade, N. J., May 21; young left nest Pensauken, N. J., June 14 (*Miller*).

Mniotilta varia, Black and White Warbler. Princeton, N. J., last seen, Sept. 30, 1907 (*Rogers*); common breeder at Bennett, N. J. (*Harlow*).

Helminthophila pinus, Blue-winged Warbler. Princeton, N. J., last seen, Sept. 22, 1907 (*Rogers*); eggs at Valley Falls, June 1 (*Miller*).

Helminthophila chrysoptera, Golden-winged Warbler. Media, May 3 (*Allen*); Kennett Square, May 10 (*C. J. Pennock*); Concordville, May 12 (*Styer*); Wayne, May 1 (*Pearson*); Wayne, May 5 (*Redfield*); Frankford, May 8 (*Miller*); Tinicum, May 5 (*Harlow*); Ardmore, May 12 (*Baily*).

Helminthophila rubricapilla, Nashville Warbler. Easton, May 2 (*Marx*); George School, March 8 (*Packer*); Wayne, May 2 (*Pearson*); Wayne, May 2 (*Redfield*).

Helminthophila peregrina, Tennessee Warbler. Lansdowne, May 13, one in full song (*Pennock*).

Compsothlypis americana usneæ, Parula Warbler. Princeton, N. J., last seen, Oct. 13, 1907, and May 19 (*Rogers*).

Dendroica tigrina, Cape May Warbler. Media, May 17 (*Allen*).

Dendroica coronata, Myrtle Warbler. Princeton, N. J., last seen Nov. 11, 1907 and May 11 (*Rogers*).

Dendroica caerulescens, Black-throated Blue Warbler. Princeton, N. J., last seen Sept. 26, 1907 and May 16 (*Rogers*).

Dendroica maculosa, Magnolia Warbler. Princeton, N. J., last seen Sept. 26, 1907 and May 19 (*Rogers*).

Dendroica castanea, Bay-breasted Warbler. Haverford, May 11 (*Petry and Lewis*); Lansdowne, May 14, 17 and 18 (*Pennock*); Bryn Mawr, May 11 (*Thomas*); Lansdowne, May 17, unusually abundant (*Carter*); George School, May 13, (*Pucker*); Wayne, May 14 and 16 (*Pearson*), Frankford, May 8 (*Miller*); Ardmore, May 12 (*Baily*); Princeton, N. J., May 16 and 19 (*Rogers*).

Dendroica striata, Black-poll Warbler. Princeton, N. J., last seen Oct. 12, 1907 and May 29 (*Rogers*).

Dendroica blackburniae, Blackburnian Warbler. Princeton, N. J., last seen May 20 (*Rogers*).

Dendroica virens, Black-throated Green Warbler. Princeton, N. J., last seen Sept. 26, 1907, and May 16 (*Rogers*).

Dendroica vigorsii, Pine Warbler. Wayne, April 14, 18 and 19 (*Redfield*); Princeton, N. J., last seen April 22, unusually plentiful (*Rogers*).

Dendroica palmar. hypochrysea, Yellow Palm Warbler. Princeton, N. J., last seen Oct. 15, 1907 and Apr. 24 (*Rogers*).

Seiurus noveboracensis, Short-billed Water Thrush. Princeton, N. J., last seen May 21 (*Rogers*).

Seiurus motacilla, Louisiana Water Thrush. On Wissahickon Creek, June 22, 29, July 1, 2, 3, one young bird on July 2, (*Pearson*); Princeton, N. J., May 9 (*Rogers*); Wissahickon, June 7, old and young (*Miller*).

Geothlypis agilis, Connecticut Warbler. Wayne, Oct. 5.

Geothlypis philadelphia, Mourning Warbler. Lansdowne, May 24 (*Carter*); Lopez, May 22 (*Behr*).

Geothlypis trichas, Maryland Yellowthroat. Princeton, N. J., last seen Oct. 13, 1907 (*Rogers*).

Wilsonia pusilla, Wilson's Warbler. Easton, May 16 (*Marx*); Concordville, May 13 (*Styer*); Wayne, March 12, 14, 16 and 18 (*Pearson and Redfield*); Frankford, May 8 (*Miller*); Tinicum, May 5 (*Harlow*); Moorestown, N. J., May 13, several (*Mickle*);

Haverford, May 12 (*Petry* and *Lewis*); Lansdowne, May 17 (*Pennock*); Woodland Cemetery, May 14 and 18 (*Hill*); Stafford Forge, N. J., May 21 (*Hill*).

Wilsonia canadensis, Canadian Warbler. Princeton, N. J., last seen May 25 (*Rogers*).

Setophaga ruticilla, Redstart. Princeton, N. J., last seen September 30 (*Rogers*). Six pairs along Pennypack Creek, June 13, between Walnut Hill and Bustleton, nest at Vereesville, June 13 (*Miller*).

Anthus pensilvanicus, Titlark. Moorestown, N. J., one Nov. 11-Dec. 2, 1907 (*Miekle*); Haverford, April 24 (*Petry* and *Lewis*); Kennett Square, flock of thirty March 20 (*Pennock*); George School, March 11, May 5 (*Packer*); Princeton, N. J., last seen Oct. 31, 1907 and April 12 (*Rogers*); Bridesburg large flocks Oct. 3-Nov. 2, 1907, two on Feb. 26 (*Miller*); Edge Hill, Feb. 29-May 6, and Tinicum March 26-May 5 (*Harlow*); Wayne, March 8, 12, 13, 16 and 21 (*Pearson*).

Mimus polyglottos, Mockingbird. One seen at Cape May, N. J., April 21, 22, 24 (*Hand*).

Galeoscoptes carolinensis, Catbird. Princeton, N. J., last seen Oct. 12, 1907 (*Rogers*).

Toxostoma rufum, Brown Thrasher. Princeton, N. J. last seen Sept. 30, 1907 (*Rogers*).

Thryothorus ludovicianus, Carolina Wren. Several heard between Yardley and New Hope (*W. E. Roberts*); along Millstone River near Princeton, N. J., March 8-June, first occurrence nearer than Pennington (*Rogers*).

Nannus hiemalis, Winter Wren. Last seen at Haverford, April 26 (*Petry* and *Lewis*); Bryn Mawr, Sept. 17-April 17 (*Thomas*); Bristol, April 12 (*Keim*); Easton, Nov. 16-April 17 (*Marx*); George School, Oct. 5-April 20, (*Roberts*); one at Lopez in Jan. and Feb. (*Behr*); Wayne, Oct. 20-April 14 (*Pearson* and *Redfield*); Princeton, N. J., Oct. 13-March 5 only one wintered (*Rogers*); Glenside, Sept. 18-April 19, scarce in winter (*Harlow*); Frankford, Sept. 26-May 1, only one seen in winter (*Miller*).

Telmatodytes palustris. Eggs at Richmond, May 27, an albino set collected June 3, differed from those of *C. stellaris* in shape, color and texture of shell (*Miller*).

Certhia familiaris americana, Brown Creeper. Last seen at George School, Apr. 12 (*Packer*); Wayne, Oct. 13–April 17 (*Pearson*); Princeton, N. J., Sept. 26–Apr. 21 (*Rogers*); Frankford, Oct. 10–Dec. (*Miller*); Glenside, Oct. 5–April 21 (*Harlow*); first seen at Haverford, March 28 (*Petry* and *Lewis*); Bryn Mawr, Oct. 13–April 17 (*Thomas*); Bristol, Oct. 27–April 12 (*Keim*); Moorestown, N. J., Oct. 5, 1907 (*Mickle*).

Sitta canadensis, Red-breasted Nuthatch. Moorestown, N. J., May 2 and 5 (*Mickle*); Wayne, Oct. 5, 1907 (*Pearson*); Frankford, Oct. 14 and 16, 1907 and March 10 (*Miller*).

Parus atricapillus, Black-capped Chickadee. Bryn Mawr, Nov. 16–March 21 (*Thomas*); Easton, Nov. 16–April 3 (*Marx*); Wayne, Nov. 16–March 30 (*Pearson*); Glenside, Oct. 25–April 5 (*Harlow*).

Regulus satrapa, Golden-crowned Kinglet. Last seen at Haverford, April 21 (*Petay* and *Lewis*); Media, April 5 (*Pulmer*); Oak Lane, April 5 (*Allen*); Bryn Mawr, Oct. 1–April 17 (*Thomas*); Bristol, April 17 (*Keim*); Easton, Oct. 9–April 21 (*Marx*); George School, April 12 (*Packer*); Wayne, Oct. 5–April 19 (*Pearson*); Princeton, N. J., Oct. 5–April 14 (*Rogers*); Frankford, Oct. 1–April (*Miller*); last at Glenside, April 24, (*Harlow*).

Regulus calendula, Ruby-crowned Kinglet. One carefully identified was seen at Easton, Jan. 17, again March 7 and on March 12, 14 and 21 (*Marx*); Princeton, N. J., Oct. 5–22, 1907 (*Rogers*).

Polioptila caerulea, Blue-Gray Gnatcatcher. Wayne, one shot April 18 (*Pearson*); another May 2 (*Redfield*).

Hylocichla g. pallasi, Hermit Thrush. Princeton, N. J., last seen Oct. 15, 1907 (*Rogers*); Edge Hill, Dec. 1, 1907 (*Harlow*).

Hylocichla u. swainsoni, Olive-backed Thrush. Princeton, N. J., last seen Oct. 6, 1907 (*Rogers*).

City Ornithology

Mary S. Allen furnishes the following list of birds observed in the Friends' Western Burial Ground, Sixteenth and Race Streets, Philadelphia.

1907. Flicker, Sept. 13, 14, 20 and 21 ; Brown Thrasher, Sept. 21.

1908. Flicker, May 26 ; Song Sparrow, March 12, and May 15 ; Chewink, April 28, and May 8 ; White-throated Sparrow, April 28 ; Ovenbird, May 8 ; Black-poll Warbler, May 23 and 27 ; Brown Creeper, May 1 ; Robin, March 27 and all season.

Mr. and Mrs. Thos. R. Hill observed the following species in Woodland Cemetery, W. Phila. Sparrow Hawk, resident; Crow resident; Flicker, March 22; Crested Flycatcher, May 14; Phoebe, March 30; Wood Pewee, May 3; Least Flycatcher, May 10; Red-winged Blackbird, March 22; Purple Grackle, March 22; Song Sparrow resident; Chipping Sparrow, March 22; Field Sparrow, March 27; White-throated Sparrow, April 22; Chewink, March 27; Cardinal, March 30; Black and White Warbler, April 25; Parula Warbler, April 27; Wilson's Warbler, May 14; Myrtle Warbler, April 25; Magnolia Warbler, May 18; Pine Warbler, March 30; Yellow Palm Warbler, April 23; Prairie Warbler, April 25; Ovenbird, April 26; Maryland Yellowthroat, April 28; Redstart, April 28; Catbird, April 28; Brown Thrasher, April 22; House Wren, April 27; Brown Creeper, March 30; Golden-crowned Kinglet, March 27; Ruby-crowned Kinglet, April 21; Wood Thrush, May 3; Wilson's Thrush, May 5; Hermit Thrush, April 22; Robin, March 22.

Mr. Witmer Stone observed the following species during the Autumn of 1908, in Black Oak Park, Fifty-second and Pine

Streets, which occupies one city block, built up solidly on all four sides.

Screech Owl, Flicker, Red-headed Woodpecker (nested), Yellow-bellied Sapsucker, Downy Woodpecker, Phoebe, Crow, Purple Grackle, White-throated Sparrow, Junco, Gold-finch, Pine Finch, Chewink, Red-eyed Vireo, Redstart, Magnolia Warbler, Black-poll Warbler, Black and White Warbler, Maryland Yellow-throat, Carolina Wren, Winter Wren, House Wren, Brown Creeper, White-breasted Nuthatch, Hermit Thrush, Robin.

Abstract of the Proceedings of the Delaware Valley Ornithological Club, 1908

January 2, 1908. Annual Meeting. Thirty-three members present. The following officers were elected for the ensuing year: President, William A. Shryock; Vice-President, Stewardson Brown; Secretary, Chreswell J. Hunt; Treasurer, Samuel Wright.

Dr. Trotter read a paper entitled "The Ornithological Background."* Several Christmas day lists were read and some of the early days of the Club's history were discussed. A collation followed.

January 16, 1908. Twenty-one members present. Mr. Harlow read a paper on "The Fall Warblers," discussing the relative abundance and time of occurrence of the various species.

February 6, 1908. Twenty-one members present. Mr. Stone read a report on the Spring Migration of 1907 (see *Cassinia*, 1907, pp. 54-79). Starlings, *Sturnus vulgaris*, were reported from Vincenttown and Tuckerton, N. J. (*Auk*, 1908, p. 221).

February 20, 1908. Twenty-five members present. John D. Carter, under the title of "Marsh Nesting," described a trip to Stone Harbor, N. J., during May, 1907 in company with William B. Evans. The colony of Laughing Gulls was estimated at over 500, possibly 1000 birds. The speaker also described trips to the Tinicum meadows on the Delaware where he found the King Rail nesting.

March 5, 1908. Nineteen members present. This being the spring meeting for the election of members, the candidates were

* Bird Lore.

discussed and election held with the following results; Thomas D. Keim, Richard C. Harlow and Cornelius Weygandt were chosen Active Members and William S. Essick, Richard F. Miller, Alfred C. Redfield, Leonard S. Pearson and George Abbott, Jr., Associates; Arthur C. Emlen was transferred to the associate class.

Mr. Street described the "Spring Bird Life of Rancocas Creek." He divided the stream into three sections: the tide-water marshes reaching up to Mt. Holly; the intermediate area from there to Pemberton; the pine-barren section to Brown's Mills; and commented upon the characteristic birds of each.

Mr. Hunt followed with some "Notes on the Birds of Northwestern Chester Co., Pa."

March 19, 1908. Twenty-five members present. The resignation of Mr. Douglas Macfarlan was accepted with regret.

Mr. Brown spoke on "Some Birds of Bermuda," describing a trip during February of the present year. Discussion followed upon the relationship of Bermuda birds. Species seen were the Cardinal, Catbird or "Blackbird" of the natives, Bluebird, White-eyed Vireo, Ground Dove, European Gold-finch, Sharp-shinned Hawk, Screech Owl, Bobwhite, Great Blue Heron, Killdeer, Tropic Bird and Crow.

Mr. Rehn exhibited a copy of Rothschild's "Extinct Birds" from the Academy Library and discussed specimens of extinct species in the Academy's collection. Mr. Harlow read a letter from Mr. R. B. Simpson reporting a Glaucous Gull (*Larus glaucus*) seen at Erie, Pa.

April 2, 1908. Twenty-one members present. Mr. S. N. Rhoads discussed the subject of "Birds as Weed Destroyers." His conclusions based on a practical experience in farming were that seed-eating birds were not as important a factor in the destruction of weeds as the Bulletins of the U. S. Department of Agriculture would have us believe. The production of weed seed is so enormous that the amount eaten by birds was considered to be really a negligible quantity in a discussion of the

weed problem. Furthermore, birds confine their feeding chiefly to uncultivated ground and neglected corners of the farm. Mr. Rhoads was glad that there were weeds to furnish food for our winter birds.

April 16, 1908. Nineteen members present. Dr. Trotter addressed the Club on "Brain and Organs in Birds" illustrating his remarks with diagrams.

Mr. Stone exhibited several specimens of parrots apparently referred to different genera on account of slight differences in bill contour and called attention to the striking similarity of coloration. He considered that color-pattern was in such cases an older character than bill contour and that by giving slight structural difference so much weight as generic characters, we often misrepresented the phylogeny of a group.

Mr. Morris described a canoe trip down the Egg Harbor River, March 25-26. He noted great numbers of Red-breasted Nuthatches (*Sitta canadensis*) and one Pileated Woodpecker (*Phlæotomus pileatus abieticola*).

May 7, 1908. Twenty-two members present. Mr. Harlow described the nesting of the Duck Hawk (*Falco peregrinus anatum*) on the Nockamixon Cliffs on the Delaware river in Bucks Co., Pa., and his successful efforts to secure a set of eggs. The latter were deposited upon a bare shelf of rock with no vestige of a nest. Mr. Harlow was of the opinion that this species nested also on the Tammany Cliff, at the Delaware Water Gap, and Mr. Rhoads stated that he had seen the birds about the Gap on three different occasions. Mr. Harrower described several trips to Clementon, N. J. He saw a Hooded Warbler there on May 23 and a Redstart on June 9. Mr. Rhoads reported House Wrens as absent from Haddonfield this spring. This was the last meeting held in the old Ornithological room of the Academy, which is to be partially destroyed in the projected alterations to the building.

May 21, 1908. Thirty-two members present. Mr. Baily described a June trip to Mt. Pocono, Pa., illustrating his remarks with a series of beautiful lantern slides. He found nests of the

Black-and-White and Nashville Warblers, White-throated Sparrow and Hermit Thrush.

Mr. Harlow called attention to the variation in the markings of hawks' eggs. He was of the opinion that as the bird advanced in age its eggs became more heavily blotched.

Mr. Carter spoke of the unusual abundance of Bay-breasted Warbler during the present spring. Meeting held in the Academy Library.

October 1, 1908. Twenty-three members present. Mr. Stone announced that until the alterations to the building were completed the meetings would be held in the room of the Microscopical Section.

Mr. Brown described the birds seen by him during the summer on an extended trip from Laggan to the Saskatchewan and Athabaska rivers in British Columbia. As botany was his main object bird-observations were merely incidental.

October 15, 1908. Fifteen members present. Mr. Spaeth made an interesting communication on "Birds Observed in Wyoming" during a summer spent at Gillette, Crook Co.

A letter from Mr. Otto Behr, of Lopez, Sullivan Co., Pa., described the calling of the Black-billed Cuckoo (*Coccyzus erythrophthalmus*) after dark as it flew about overhead.

November 5, 1908. Twenty-five members present. This being the autumn election meeting, the following were chosen Associate Members, Thomas R. Hill, Edwin B. Bartram and Robert T. Moore.

Messrs S. N. Rhoads and J. D. Carter described the bird life of Raquette Lake in the Adirondacks where each had spent a portion of the summer, their trips following one another so as to be in a measure supplementary. The Rusty Blackbird, Olive-sided Flycatcher, Olive-backed Thrush, American Three-toed Woodpecker, Raven and Lincoln's Finch, were the most interesting species noted.

November 19, 1908. Eighteen members present. William B.

Evans was upon request transferred to Associate Membership having removed to Westtown, Pa.

Mr. Hunt described the "Bird Life of the Lower Maurice River, N. J." (see *antea* pp. 14-19).

December 3, 1908. Twenty members present. Thomas D. Keim was upon request transferred to Corresponding Membership, having removed to New York City.

Mr. Pennock read a paper entitled "Further Notes from Delaware." A Blue Grosbeak (*Guiraca caerulea*) obtained May 16, at Rehoboth and a flock of American Crossbills (*Loxia c. americana*) seen May 18, 1908 at the same place were the most interesting records.

Mr. Stone followed with an account of the recent meeting of the American Ornithologists' Union, at Cambridge, Mass., which he had attended.

December 17, 1908. Fourteen members present. Mr. Morris read a paper entitled "Modern Ornithologists" in which he reviewed the lives and work of the more prominent American Ornithologists from Prof. Baird to the present day.

Bibliography for 1908

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- BISHOP, L. B. The most Southern Starling Record. *Bird Lore*, March-April, 1908, p. 81. Tacony, Phila., Dec. 9, 1907.
- BROWN, CLARENCE. A Winter Rose-breasted Grosbeak. *Bird Lore*, March-April, 1908, p. 82. At Rutherford, N. J., Jan. 26-Feb. 13.
- BURNS, F. L. Loon (*Gavia imber*), near Berwyn, Chester County, Pa. *Wilson Bulletin*, Dec., 1908, p. 215. Two taken on a small dam on Chesterbrook Farm, Nov. 14, 1908, during a snow storm.
- CAMPBELL, E. W. [Young Solitary Sandpiper, in down, from north of Pittston, Pa.] *Oologist*, 1908, p. 121.
- CAMPBELL, E. W. Winter Wren. *Oologist*, June, 1908, p. 92. Nest at Mahoopany, Wyoming Co., Pa., May 23, 1908.
- CAMPBELL, E. W. Carolina Chickadee in Pennsylvania. *Oologist*, Oct., 1908, p. 156.
- CLARKE, W. G. A Family of Great Owls. *Bird Lore*, May-June, 1908, pp. 99-102. Barred Owls at Schraalenburgh, N. J.
- DARLINGTON, E. J. Great Blue Heron. *Oologist*, April, 1908, p. 54. Seventeen sets of eggs from Delaware.
- DEWITT, EDMUND. A Purple Martin's House. [Lawrenceville, N. J.] *Forest and Stream*, April 4, 1908, p. 532.
- HARLOW, RICHARD C. Nesting of the Broad-winged Hawk in Delaware County, Pa. *Oologist*, Aug., 1908, p. 117.
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- HARLOW, RICHARD C. Breeding of the Loon in Pennsylvania. *Auk*, Oct., 1908, p. 471. Found by C. Homan on a lake near Bushkill, Monroe County, May, 1908.
- HARLOW, RICHARD C. Bobolinks Summering in Southern Pennsylvania. *Auk*, April, 1908, p. 222.
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- HARLOW, RICHARD C. Virginia Rail and Kentucky Warbler in New Jersey. *Auk*, April, 1908, p. 218. Kentucky Warbler at Manahawken, July 3, 1904, and May 21, 1907.
- HILL, THOS. R. A Southern Starling Record. *Bird Lore*, May-June, 1908, p. 130. W. Philadelphia.
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- HOWE, REGINALD HEBER, JR. *Ardea egretta* in New Jersey. *Auk*, Oct., 1908, p. 473. One shot, July 6, 1908, at Black Point, Monmouth County, by R. B. Romaine.
- HUNT, C. J. The Kentucky Warbler in Southern New Jersey. *Auk*, Jan., 1908, p. 87.
- HUNT, C. J. The Tree Swallow Nesting in the Delaware Valley. *Auk*, Jan., 1908, p. 85.
- HUNT, C. J. *Rallus virginianus* a Delaware Valley Breeder. *Auk*, Jan., 1908, p. 81.
- LEIBELSPERGER, W. H. Some Rare Summer Residents of Berks County, Pennsylvania. *Auk*, April, 1908, p. 232.
- MILLER, RICHARD F. Nesting of the Short-billed Marsh Wren in Philadelphia, Pa. *Auk*, July, 1908, p. 320. Nest with white eggs recorded; birds not secured.
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- MILLER, RICHARD F. Nesting of the Coot in Philadelphia

- County, Pa. *Auk*, April, 1908, p. 219. Not a conclusive record.
- MILLER, RICHARD F. The Black Tern at Camden, N. J., and Philadelphia, Pa. *Auk*, April, 1908, p. 215.
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- OLDYS, HENRY. Capture of a Tagged Canvasback Duck. *Auk*, Jan., 1908, p. 80. At Manahawken Bay, N. J., tagged T. J. O. D. 48.
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- PENNOCK, C. J. White-crowned Sparrows unusually abundant in Eastern Pennsylvania. *Auk*, July, 1908, p. 319.
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- SHARPLES, R. P. Chimney Swifts Nesting in Hollow Trees. *Oologist*, Aug. 1908, p. 120.
- STONE, WITMER. Methods of Recording and Utilizing Bird-Migration Data. *Proc. Acad. Nat. Sci. Phila.*, 1908, pp. 128-156.
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- Thirty-one Christmas Bird Lists from Penna., N. J. and Del., *Bird Lore*, Jan.-Feb., 1908, pp. 29-33.

II. Other Ornithological Papers by Members of the Club.

- HARLOW, RICHARD C. The Crested Flycatcher on Strange Grounds. *Oologist*. Jan., 1908, p. 12, nest in a water spout.
- MILLER, RICHARD F. A White-eyed Vireo's Peculiar Method of Feeding. *Oologist*, Oct., 1908, p. 153.
- MILLER, R. F. Anent the Cardinal. *Oologist*, Aug., 1908, p. 120.
- MILLER, R. F. Four sets of eggs from one bird nest. *Oologist*, Aug., 1908, p. 119. [Wood Thrush].
- SHARPLES, R. P. Nature's Remedies. *Bird Lore*. Mar.-Apr. 1908, p. 83. [Screech Owls eating English Sparrows].
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- STONE, WITMER. Correction. *Wilson's Bulletin*. Sept., 1908, 154 [to Burns' Article on Wilson].
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- TROTTER, SPENCER. The Background of Ornithology. *Bird Lore*, Mar.-Apr., 1908, pp. 68-71.

Bird Club Notes

THE Club held sixteen meetings during the year, in which fifty members participated. The average attendance was twenty-two.

* * *

Messrs. Rhoads, Pennock and Stone represented the Club at the meeting of the American Ornithologists' Union at Cambridge, Mass., November 16-19. W. E. Clyde Todd of our Correspondents was also present, and presented a paper, "Bird Studies in Northern Ontario."

* * *

During the past year William B. Evans has been appointed Instructor in Natural History at Westtown Boarding School; Thomas D. Keim has removed permanently to New York City and Richard C. Harlow has been attending college at the State Institution at Bellefonte; so that the Club loses three valuable members. Herbert L. Coggins is still at Fresno, California.

* *

The Club was as usual widely scattered during the summer, Shryock was in Europe and Brown exploring unknown lakes in the British Columbian Rockies; Rehn took a flying trip to North Carolina; Carter and Rhoads were in the Adirondacks, Dr. Hughes in Montana and Dr. Trotter in Nova Scotia.

* * *

Three Club outings were attempted during the year. On February 22 thirteen members with Mr. J. Fletcher Street as guide explored the country about Sweed's Run and Mill Creek, Burlington, Co., N. J.

On May 30 Mr. W. L. Baily invited the Club to spend the day at his home in Ardmore. Elaborate plans were made to organize two parties to tramp across country to Ardmore, one

starting from Lansdowne on the south and the other coming up Mill Creek from the northeast. Unfortunately a downpour of rain which lasted all day seriously interfered with the plan and only seven members were present to enjoy Mr. Baily's hospitality.

In December, Messrs. Hunt and Griffiths offered the hospitality of their Cabin on the Pensauken Creek, N. J., but inclement weather again interfered with the trip.

OFFICERS AND MEMBERS

OF THE

Delaware Valley Ornithological Club.

1909.

WILLIAM A. SHRYOCK, *President*.
 STEWARDSON BROWN, *Vice-President*.
 CHRESWELL J. HUNT, *Secretary*, 225 N. Fifty-third St., Phila.
 SAMUEL WRIGHT, *Treasurer*, Conshohocken, Pa.

ACTIVE MEMBERS.

WILLIAM L. BAILY, Ardmore, Pa.	Founder.
STEWARDSON BROWN, 20 E. Penn St., Germantown, Phila.	*1891
JOHN D. CARTER, Lansdowne, Delaware Co., Pa.	1900
HERBERT L. COGGINS, 5025 McKean Ave., Germantown, Phila.	1897
I. NORRIS DE HAVEN, Ardmore, Pa.	1891
HENRY W. FOWLER, Holmesburg, Phila.	1894
RICHARD C. HARLOW, Edge Hill, Pa.	1904
WILLIAM E. HUGHES, M. D., 3945 Chestnut St., W. Phila.	1891
CHRESWELL J. HUNT, 225 N. Fifty-third St., W. Phila.	1902
THOMAS D. KEIM, 405 Radcliffe St., Bristol, Pa.	1902
GEORGE SPENCER MORRIS, Olney, Phila.	Founder.
CHARLES J. PENNOCK, Kennett Square, Pa.	1895
JAMES A. G. REHN, 5141 Locust St., Phila.	1899
SAMUEL N. RHODES, Haddonfield, N. J.	Founder.
WILLIAM A. SHRYOCK, 209 S. Sixth St., Phila.	1891
WITMER STONE, Academy Nat. Sciences, Phila.	Founder.
SPENCER TROTTER, M. D., Swarthmore College, Delaware Co., Pa. .	Founder.
CORNELIUS WEGGANDT, Ph. D., Wissahickon Ave. below Frank St., Ger-	
mantown, Phila.	1891
SAMUEL WRIGHT, Conshohocken, Pa.	1892

* Date indicates year of election to Club.

ASSOCIATE MEMBERS.

GEORGE ARROTT, JR., Riverton, N. J.	1908
J. HAROLD ACSTIN, Lansdowne, Delaware Co., Pa.	1903
EOWIN B. BARTRAM, Wayde, Pa.	1908
PAUL C. BREWER, 261 W. Rittenhouse St., Germantown	1906
ERNEST A. BUTLER, 3305 N. 17th St., Phila.	1906
JOHN E. CHAMBERLIN, 201 West End Trust Building, Phila.	1904
STIRLING W. COLE, 116 N. Sixth St., Camden, N. J.	1904
FRANCIS R. COPE, JR., Awbury, Germantown, Phila.	1895
ARTHUR C. EMLEN, Awbury, Germantown, Pa.	1897
WM. S. ESSICK, 536 Penn St., Reading, Pa.	1908
ERNEST M. EVANS, Awbury, Germantown, Phila.	1899
WILLIAM B. EVANS, Westtown, Pa.	1898
GEORGE FORSYTH, West Chester (Route 4), Chester Co., Pa.	1891
BARTRAM W. GRIFFITHS, 4024 Green St., W. Phila.	1902
REV. JOHN H. HACKENBERG, 4231 Paul St., Frankford, Phila.	1903
ARTHUR F. HAGAR, 626 Westview Ave., Germantown, Phila.	1906
SAMUEL S. HAINES, M. D., 124 E. Main St., Moorestown, N. J.	1901
THOS. R. HILL, 47th St. and Baltimore Ave., Phila.	1908
DAVID E. HARROWER, Swarthmore, Pa.	1905
KENNETH HOWIE, 48 Sedgewick Ave., Germantown, Phila.	1904
CHARLES JACK, M. D., Media, Pa.	1906
WILLIAM JOHNS, 1548 N. 61st St., Phila.	1905
WILLIAM W. JUSTICE, JR., Clapier St. & Wissahickon Ave., Germantown, Phila.	1893
RAYMOND KESTER, 1514 Chestnut St., Phila.	1892
NATHAN KITE, Moylan, Delaware Co., Pa.	1898
M. ALBERT LINTON, Haverford College, Pa.	1905
JOSEPH B. LODGE, 3340 N. Sixteenth St., Phila.	1900
PAUL L. LORRILLIERE, Collingdale, Del. Co., Pa.	1904
DAVID N. McCAODEN, 4204 Powelton Ave., W. Phila.	1892
RICHARD C. McMURTRIE, Fort Washington, Pa.	1904
F. GUY MEYERS, 1110 S. Forty-seventh St., W. Phila.	1897
ISAAC P. MILLER, 409 Chestnut St., Phila.	1907
RICHARD F. MILLER, 2073 E. Tioga St., Phila.	1908
ROBERT T. MOORE, Haddonfield, N. J.	1908
WAYNE B. MORRELL, 5525 Jefferson St., Phila.	1905
ELMER ONDERDONK, 4309 Wyalusing Ave., Phila.	1903
LEONARD S. PEARSON, Wayne, Pa.	1908
JAMES F. PRENDERGAST, M. D., 4012 Chestnut St., W. Phila.	1899
FRANCIS W. RAWLE, 211 S. Sixth St., Phila.	1907
ALFRED C. REDFIELD, Wayne, Pa.	1908
CHARLES J. RHOADS, Bryn Mawr, Pa.	1890
GEORGE C. ROBERTS, Box 196, Sharon Hill, Pa.	1906
WILLIAM E. ROBERTS, George School, Bucks Co., Pa.	1901

ANTHONY W. ROBINSON, 409 Chestnut St., Phila.	1898
WILLIAM B. SCHUING, 317 N. 63d St., Phila.	1893
SAMUEL C. SCOVILLE, Penna. Bldg., 15th & Chestnut Sts., Phila.	1907
C. FEW SEISS, 1338 Spring Garden St., Phila.	1892
EDWARD A. SELLEZ, 1317 N. Nineteenth St., Phila.	1902
WILLIAM J. SERRILL, Haverford, Pa.	1891
WALTER G. SIRLEY, 6626 McCallum St., Germantown, Phila.	1900
L. I. SMITH, JR., 3908 Chestnut St., W. Phila.	1901
WALTER GORDON SMITH, 5870 Drexel Road, W. Phila.	1898
REYNOLD A. SPAETH, Haverford College, Pa.	1901
JOHN H. STEELE, 4008 Spruce St., W. Phila., Phila.	1903
WILLIAM M. STRANG, 277½ Chestnut St., Camden, N. J.	1907
J. FLETCHER STREET, Beverly, N. J.	1903
NORMAN W. SWAYNE, Friends' Academy, Locust Valley, N. Y.	1906
JOSEPH W. TATUM, 5220 Parkside Ave., W. Phila.	1892
WILLIAM H. TROTTER, Chestnut Hill, Phila.	1899
HENRY TUCKER, M. D., 2000 Pine St., Phila.	1906
CHARLES A. VOELKER, Aldan, Delaware Co., Pa.	Founder.
PAUL VOSRERG, 1539 N. Allison St., Phila.	1905
CHARLES S. WELLES, Elwyn, Delaware Co., Pa.	1900
A. L. WHEELER, Bryn Mawr, Pa.	1905
ALBERT L. WHITAKER, Cedar Grove, Frankford, Phila.	1896
JAMES L. WHITAKER, Cedar Grove, Frankford, Phila.	1904
WALTER R. WHITE, Laundowne, Delaware Co., Pa.	1903
EDWARD W. WOOLMAN, 44 N. Thirty-eighth St., W. Phila.	1902

CORRESPONDING MEMBERS.

CHARLES H. BAKER, Verona, Alleghany Co., Pa.	1900
THOMAS J. BEANS, Moorestown, N. J.	1895
HERMAN BEHR, Jennings, Md.	1897
OTTO BEUR, Lopez, Sullivan Co., Pa.	1897
W. H. BULLER, Marietta, Lancaster Co., Pa.	1895
CHARLES BUVINGER, M. D., Newark, N. J.	1900
WILLIAM J. CRESSON, Box 249, Pittsburg, Pa.	1899
THOMAS C. DESMOND, Cambridge, Mass.	1905
LIEUT. FRANK B. EASTMAN, U. S. A., Presidio, San Francisco, Cal.	1898
MARCUS S. FARR, Princeton, N. J.	1901
ALFRED M. GITHENS, New York City.	1895
HARRY L. GRAHAM, Redlands, Cal.	1897
ALLEN H. GROSH, York, York Co., Pa.	1900
HENRY HALES, Ridgewood, N. J.	1895
H. WALKER HAND, 1002 Washington St., Cape May, N. J.	1900
WM. E. HANNUM, Lynn, Mass.	1901
THOMAS H. JACKSON, West Chester, Pa.	1895

J. WARREN JACOBS, Wrynesburg, Greene Co., Pa.	1895
SAMUEL B. LADD, West Chester, Pa.	1895
WALDRON DE W. MILLER, Plainfield, N. J.	1900
SAMUEL C. PALMER, Cambridge, Mass.	1899
HOWARD V. PENNELL, M. D., Downingtown, Pa.	1894
A. H. PHILLIPS, Princeton, N. J.	1895
M. W. RAUB, M. D., Lancaster, Pa.	1895
H. JUSTIN RODDY, State Normal School, Millersville, Lanc. Co., Pa.	1895
CHAS. H. ROGERS, 39 Univ. Plrce, Princeton, N. J.	1905
ROBERT P. SHARPLES, West Chester, Pa.	1906
R. B. SIMPSON, Warren, Warren Co., Pa.	1907
FREDERICK SÖRENSEN, Chalmersgrtten, Göttenburg, Sweden	1900
FREDERICK W. STACK, Doubleday Page and Co., N. Y. City.	1905
HUGH E. STONE, Coatesville, Pa.	1895
H. A. SURFACE, Harrisburg, Pa.	1900
C. F. SYLVESTER, Princeton, N. J.	1901
W. E. CLYDE TODD, Carnegie Museum, Pittsburg, Pa.	1895
HENRY WARRINOTON, San Francisco, Cal.	1896
ASA P. WAY, Bridgeton, N. J.	1902
WILLIAM H. WERNER, Atlantic City, N. J.	1901
WILLIAM L. WHITAKER, Adm, Okla.	1893
J. JAY WISLER, Columbia, Pa.	1904
ROBERT T. YOUNG, State University, N. Dakota	1892

DECEASED MEMBERS.

Died.

JOHN FARNUM BROWN, Active member	May 13, 1894
WALTER D. BUSH, Corresponding member	August 11, 1904
JOHN W. DETWILLER, M. D., Corresponding member	September 26, 1898
LARUE K. HOLMES, Corresponding member	May 10, 1906
JOSIAH HOOPES, Corresponding member	January 16, 1904
AUGUST KOCH, Corresponding member	February 15, 1907
GILBERT H. MOORE, Associate member	May 28, 1899
FREDERICK N. OWEN, Associate member	December 27, 1905
WILLIAM PATTERSON, Corresponding member	August 27, 1900
EDWIN SHEPPARD, Associate member	April 7, 1904
WILLIAM W. SMITH, Associate member	July 3, 1892
SAMUEL W. WOODHOUSE, M. D., Honorary member	October 23, 1904

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